TAPR TACGPS Development and Support Mailing List Archive, January 1999 through December 1999

January 1999 through December 1999

the development and support forum for TAPR's TAC-2 GPS precision-timing project, covering Motorola Oncore receivers, timing and frequency standards, NMEA data, firmware and software, circuit boards, assembly, testing, antennas, Unix tools, calibration, and scientific timing applications.

This volume contains 12 original monthly files and 642 messages, arranged chronologically. The PDF is a readable access copy: MIME transfer encodings are decoded, HTML bodies are converted to plain text, and non-text attachments are represented by descriptive notes. The raw source text is supplied separately with the Internet Archive item.

Month	Messages	Original source file
1999-01	86	tacgps.9901
1999-02	64	tacgps.9902
1999-03	95	tacgps.9903
1999-04	43	tacgps.9904
1999-05	76	tacgps.9905
1999-06	12	tacgps.9906
1999-07	64	tacgps.9907
1999-08	57	tacgps.9908
1999-09	77	tacgps.9909
1999-10	30	tacgps.9910
1999-11	12	tacgps.9911
1999-12	26	tacgps.9912

January 1999

Original source file: tacgps.9901
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9901

1. Fwd: [amsat-bb] Leap Second caution

From: "Steven R. Bible" <srbible@gate.net>
Date: Sat, 02 Jan 1999 18:49:13 -0500
To: tacgps@tapr.org
Message-ID: <3.0.6.32.19990102184913.009c86d0@pop.gate.net>
Rendered body type: text/plain

```
>X-From_: owner-AMSAT-BB@AMSAT.Org Sat Jan  2 18:42:55 1999
>Date: Sat, 2 Jan 1999 18:39:13 -0500 (EST)
>From: Jim S <jsebolt@genie.idt.net>
>To: amsat-bb@AMSAT.Org, sarex@AMSAT.Org, HearSat-L@QTH.net,
>        SeeSat-L@blackadder.lmsal.com
>Subject: [amsat-bb] Leap Second caution
>Sender: owner-AMSAT-BB@AMSAT.Org
>
>A word of caution from personal experience for those of you using the new
>"atomic" clocks to obtain accurate time for your satellite listening
>and/or viewing pleasure.
>
>These clocks receive radio transmissions from WWVB to initially set and
>periodically update themselves, applying an error correction to adjust or
>fine-tune the internal time-base.
>
>The addition of a "leap-second" on January first confuses the clock into
>adjusting for the apparent one-second error by making an unwanted
>adjustment of the time-base rate.  If left alone, this should
>automatically re-adjust itself back to a correct value over an extended
>period of time.  In the interim, clock accuracy suffers.  If in doubt,
>the clock should have a "reset" button hidden away somewhere which will
>force the processor to return to default and start over.
>
>I was impatient and forced a reset so I cannot guess as to how long an
>automatic resync would take.  I can say that the effects of the
>leap-second adjustment were quickly apparent when compared to another
>clock with only manual adjustment.
>
>Happy New Year!     ;)
>----
>Via the amsat-bb mailing list at AMSAT.ORG courtesy of AMSAT-NA.
>To unsubscribe, send "unsubscribe amsat-bb" to Majordomo@amsat.org
>
>
 - Steve
 (n7hpr@tapr.org)
 (n7hpr@amsat.org)
```

2. 2 GPS Questions

From: Rosenberg.Eric@orbcomm.com
Date: Wed, 6 Jan 1999 15:15:00 -0500
To: tacgps@tapr.org
Message-ID: <852566F1.006ED57B.00@OCCSMTP.ORBCOMM.COM>
Rendered body type: text/plain

```
2 probably simple questions:

1. What is the specification for velocity accuracy with 'normal' (i.e.,
no-differential) GPS operations?  Can one rely on the receiver's display of
speed.

2.  Someone posted a mailing list for the TH-D7A HT, but I lost it. What is
it?

Thanks,

Eric W3DQ
rosenberg.eric@orbcomm.com
```

3. RE: [TACGPS:1982] 2 GPS Questions

From: "Horzepa, Stan" <Stan_Horzepa@adc.com>
Date: Wed, 6 Jan 1999 14:59:14 -0600
To: "'tacgps@tapr.org'" <tacgps@tapr.org>
Message-ID: <1B66FFC6BE1CD211A0620008C7A42AC21EF785@MRDNEXCH01.ct.adc.com>

Rendered body type: text/plain

To subscribe to the APRS HT mailing list, send email to listserv@tapr.org with the following text in the contents of the message:

subscribe htaprs <your first name> <your last name>

-----Original Message-----
From: Rosenberg.Eric@orbcomm.com [mailto:Rosenberg.Eric@orbcomm.com]
Sent: Wednesday, January 06, 1999 3:23 PM
To: tacgps@tapr.org
Subject: [TACGPS:1982] 2 GPS Questions

2 probably simple questions:

1. What is the specification for velocity accuracy with 'normal' (i.e., no-differential) GPS operations? Can one rely on the receiver's display of speed.

2. Someone posted a mailing list for the TH-D7A HT, but I lost it. What is it?

Thanks,

Eric W3DQ
rosenberg.eric@orbcomm.com

4. Re: [TACGPS:1982] TACGPS digest 376

From: Alan Crosswell <alan@columbia.edu>
Date: Wed, 6 Jan 99 16:10:32 EST
To: tacgps@tapr.org
Message-ID: <CMM.0.90.4.915657032.alan@fozimane>
Rendered body type: text/plain

>2. Someone posted a mailing list for the TH-D7A HT, but I lost it. What is

htaprs@tapr.org

5. Re: [TACGPS:1982] 2 GPS Questions

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Wed, 06 Jan 1999 18:06:20 -0500
To: tacgps@tapr.org
Message-ID: <3693EC6C.E04A2ED6@tomcat.gsfc.nasa.gov>
Rendered body type: text/plain

Rosenberg.Eric@orbcomm.com asked
> 1. What is the specification for velocity accuracy with 'normal' (i.e.,
> no-differential) GPS operations? Can one rely on the receiver's display of
> speed.

Your first sentence asks for VELOCITY and the second asks for SPEED. The two
ain't the same!!!!!!!

Velocity is a vector while speed has no direction associated with it, and is simply the magnitude of the vector velocity.

SA imparts a peak VELOCITY error of a ~1 km/hr. Just so you can see that I didn't pull this out of the hat, a handy number to remember is that, for any given satellite, the peak SA-induced "Doppler" error is ~1 Hz. Since The GPS frequency is ~1.6 GHz, this means that the resulting velocity error for one satellite with 1 Hz error is

    (~1 Hz / 1.6 GHz) * (speed of light)
  = (6*10e-10) * (3*10e5 km/sec) * (3.6*10e3 sec/hour)
  = ~0.65 km/hr = ~0.4 MPH

Your GPS receiver uses several satellites to determine the velocity, and the aggregate result is a peak velocity error no bigger than when the worst-case number is true for all satellites:

    Velocity error < ~HDOP * (each satellite's error)
 or Error < (HDOP ~2)*(0.65 km/hr=0.4 MPH) = (1.3 km/hr=0.8 MPH)

Because each satellite's SA is independent of the others, you should expect typical numbers about one-third of the peak. The average vector velocity error is zero.

This is why I'm so pedantic about the difference between VELOCITY and SPEED -- lets assume you are stopped at a traffic light. Your GPS receiver almost never shows a speed of ZERO -- typically it reads ~1 MPH, right? This is because the LCD is showing SPEED, but not the direction, so its average is never zero. It always has to be a positive number!

For the mathematically inclined, the average VELOCITY is zero and it looks like a two-dimesional gaussian distribution. The one-dimensional indicated speed has a Rayleigh distribution, with a peak about 1.5 times the one-sigma value of the two-D gaussian curve and no negative readings. In other words, I said that I expect an RMS velocity error of about (1/3)*(1.3 km/hr=0.8MPH) or RMS=(~.43 km/hr=0.26 MPH). So when I'm stopped, I expect SPEED errors ~(0.6 km/h=0.4MPH). The human notes/remembers the larger excursions, so you make the comment "My GPS must be broken. At a stop light it shows me moving nearly 1 MPH!".

Now you start moving. The SA-induced error can now make your indicated speed be either too fast or too slow. When your speed is several times the ~1 MPH threshold, the error becomes a symmetrical, gaussian shape at the ~.5km/hr=0.3MPH level.

In the intermediate speed range (moving slowly, < 5-10 MPH), the statistical distribution is messy and known as a Rice distribution and is intermediate between the Rayleigh and gaussian regimes, with a tendency for the GPS to over-estimate the true speed. So when you are hiking, you are probably moving a tad slower than indicated.

Is that what you wanted?

73, Tom

6. Re: [TACGPS:1982] TACGPS digest 376

From: Jim King <king@sstar.com>
Date: Wed, 06 Jan 1999 20:43:47 -0600
To: tacgps@tapr.org
Cc: Rosenberg.Eric@orbcomm.com
Message-ID: <199901070243.UAA26809@oasis.zycor.lgc.com>
Rendered body type: text/plain

>1. What is the specification for velocity accuracy with 'normal' (i.e.,
>no-differential) GPS operations? Can one rely on the receiver's display of
>speed.

MIT's Lincoln Lab has a GPS velocity error scatter plot at http://satnav.atc.ll.mit.edu/gps/images/gps-vscat.gif. It looks to me like the typical error is no more than 1 MPH.

7. Re: [TACGPS:1985] Re: 2 GPS Questions

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 6 Jan 1999 21:23:45 -0600
To: <tacgps@tapr.org>
Message-ID: <002801be39ed$22a31ca0$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

But shouldn't my speed be referenced to Alpha Centari?

I'm not really standing still when I'm stopped at a light :-)

> (~1 Hz / 1.6 GHz) * (speed of light)
> = (6*10e-10) * (3*10e5 km/sec) * (3.6*10e3 sec/hour)
> = ~0.65 km/hr = ~0.4 MPH

8. August 1998 Problem....

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Thu, 07 Jan 1999 17:59:17 +1100
To: tacgps@tapr.org
Message-ID: <36945B44.8CD5024E@ozemail.com.au>
Rendered body type: text/plain

I was talking to an Engineer in a sister company - in the electricity distribution business. One of their outlying offices uses GPS to keep an accurate time on the computer.... Anyway my friend was talking to the guy about Y1999 and Y2K with GPS, and the computer person said that this was the only GPS in the company....

The company has a few thousand employees mind you. My friend said to the

computer person that the surveyors used GPS. The response back was

        What would surveyors use GPS for?

My friend was also telling me that they are using GPS in the power
industry to test the protection on the transmission lines, accurately
timing tests - For those that don't realize, 50 Hz is radio, and you get
reflections if you suddenly disconnect a power transmission line, so you
have to unplug it at both ends at the right time.

Darryl VK2TDS

9. 2 GPS Questions

From: "Doug McKinney" <buoy@redshift.com>
Date: Wed, 6 Jan 1999 23:27:04 -0800
To: "TACGPS" <tacgps@tapr.org>
Message-ID: <001801be3a0f$22fa44e0$b3c6cccf@buoy.mcktech.com>
Rendered body type: text/plain

Tom, loved the response I just LOL. I hope Eric did also! Eric you gota
appreciate Tom's effort, I always do. I always save Tom's remarks and its
great we have such talented inputs (or is that OUTPUTS)!!
Thanks tom
73's
Doug

10. RE: [TACGPS:1988] August 1998 Problem....

From: "Ron L. Sparks" <spark51@ibm.net>
Date: Thu, 7 Jan 1999 12:20:33 -0600
To: <tacgps@tapr.org>
Message-ID: <002d01be3a6a$6a235f40$02651964@host-rls.fbtc.net>
Rendered body type: text/plain

It is always fun to hear of stuff like this! I can't resist "putting in my
two cents worth". Back in the dusty, cobwebs of my memory I remember doing
line transient and stability problems in school. In one of my power T&D
classes we learned the major difference between above ground and below
ground lines was how they behaved in exactly the situation your friend
described. As it turns out, above ground lines have inductance as their
primary reactive component so the transients from popping a breaker, fuse or
switch will ring and then die out. BUT, on below ground lines the
capacitive component becomes the dominant reactance and you would be shocked
<grin> to learn how high the voltage and power becomes. Imagine a three to
six voltage multiplier on a line already carrying 13.8 KV at 100 Amps! It
will make a mess of switches, contacts, breakers, and anything else.
Yeowch!

By the way, if the timing accuracy is what they are using the GPS for then I
don't see why the date roll over in August would effect them. Can anyone
explain? I thought it would only effect the positioning portion and then
only on older, non-compliant units.

Ron

-----Original Message-----
From: tacgps@tapr.org [mailto:tacgps@tapr.org] On Behalf Of Darryl Smith
Sent: Thursday, January 07, 1999 1:08 AM
To: tacgps@tapr.org
Subject: [TACGPS:1988] August 1998 Problem....

I was talking to an Engineer in a sister company - in the electricity
distribution business. One of their outlying offices uses GPS to keep an
accurate time on the computer.... Anyway my friend was talking to the
guy about Y1999 and Y2K with GPS, and the computer person said that this
was the only GPS in the company....

The company has a few thousand employees mind you. My friend said to the
computer person that the surveyors used GPS. The response back was

        What would surveyors use GPS for?

My friend was also telling me that they are using GPS in the power
industry to test the protection on the transmission lines, accurately
timing tests - For those that don't realize, 50 Hz is radio, and you get
reflections if you suddenly disconnect a power transmission line, so you
have to unplug it at both ends at the right time.

Darryl VK2TDS

11. Re: [TACGPS:1987] Re: 2 GPS Questions

From: "Eric A. Cottrell" <eac@shore.net>
Date: Thu, 07 Jan 1999 20:45:22 -0500
To: tacgps@tapr.org
Message-ID: <36956332.BBF1EFF1@shore.net>
Rendered body type: text/plain

Steve Sampson wrote:
> But shouldn't my speed be referenced to Alpha Centari?
>
> I'm not really standing still when I'm stopped at a light :-)
>
> > (~1 Hz / 1.6 GHz) * (speed of light)
> > = (6*10e-10) * (3*10e5 km/sec) * (3.6*10e3 sec/hour)
> > = ~0.65 km/hr = ~0.4 MPH

Hello,

Well it depends on your frame of reference. People use a earth surface reference that disregards earth's rotation and cosmic motion. When you are setting in a moving airplane in smooth level flight it is difficult to tell you are moving fast because everything around you is moving at the same speed. You need to reference objects outside the airplane to tell you are moving.

GPS Satellites use the earth as a reference as well because they are orbiting the earth. If you look at the raw velocity vectors you will see the effects of earth's rotation but this is eliminated in the calculations so it gives you speed in reference to the earth's surface.

I suspect that cosmic centered speeds are so high that if it was used in a speed calculation that any speed over the earth's surface would be insignificant. I rather know my speed over the earth's surface.

73 Eric eac@shore.net WB1HBU

12. Re: [TACGPS:1988] August 1998 Problem....

From: "Eric A. Cottrell" <eac@shore.net>
Date: Thu, 07 Jan 1999 21:41:07 -0500
To: tacgps@tapr.org
Message-ID: <36957043.9BDEA86B@shore.net>
Rendered body type: text/plain

Darryl Smith wrote:
> My friend was also telling me that they are using GPS in the power
> industry to test the protection on the transmission lines, accurately
> timing tests - For those that don't realize, 50 Hz is radio, and you get
> reflections if you suddenly disconnect a power transmission line, so you
> have to unplug it at both ends at the right time.

Hello,

I work for a company that supplies equipment to do this testing. In fact I work with Protective Relaying testing equipment and had a hand in the creation of the GPS timing option. After the AMSAT meeting in Washington, DC I wrote a company memo talking about various GPS receivers. Dr. Tom Clark was demoing GPS receivers at the meeting so there is an indirect connection.

The Power System is an interesting complex system as there is generation all over the place that are connected multiple ways to each other. On most transmission lines you simplify the network down to the line and two sources at each end (because there is usually generation somewhere out there off each end). Protective Relaying is used to protect the transmission lines and it controls circuit breakers at both ends of the line. 3-Phase AC is used.

Although they are called relays they are actually measuring instruments that measure such things as Voltage, Current, and Impedance. To detect faults on transmission lines the voltage and current are measured and solved for impedance. If a fault occurs (arc over, tree touching, etc) then the protection at both ends of the line will detect the impedance change and will trip it's breaker and isolate the line.

Due to various considerations (like the fact there is a complex network beyond the line) there is a simple communications link between the two relays. Power companies like to do tests to see if these two relays are coordinated and will properly operate. If they misoperate

then too wide a area could lose power. They test by using AC voltage
and current sources to replay actual or calculated fault waveforms into
the protective relays. They will have two (or more) sets of AC sources
that can be separated by many miles.

The sets of AC sources need to start replaying the fault recording at the
same time. They also need to use the same phase and frequency reference.
The GPS receivers provide all this. It allows power companies to test
equipment on-site and using more realistic conditions.

73 Eric eac@shore.net

13. Casio GPS Watch

From: Tom Van Baak <tvb@veritas.com>
Date: Sun, 10 Jan 1999 16:46:34 -0800
To: tacgps@tapr.org
Cc: DougHo@niceties.com
Message-ID: <369949EA.980@veritas.com>
Rendered body type: text/plain

There's been talk of the new Casio GPS wristwatch in
sci.geo.satellite-nav.

Press release (Japanese):
  http://www.casio.co.jp/productnews/gps.html

Press release (English):
  http://www.casio.com/corporate/pressdetail.cfm?ID=51

Small photos:
  http://www.casio.co.jp/productnews/images/gps.jpg
  http://www.casio.co.jp/productnews/images/gpsb.jpg

Large photos:
  http://www.casio.co.jp/productnews/images/gpsx.jpg
  http://www.casio.co.jp/productnews/images/gpsbx.jpg

/tvb

14. Re: [TACGPS:1993] Casio GPS Watch

From: Gordon Uber <gordon@ubr.com>
Date: Sun, 10 Jan 1999 17:16:49 -0800
To: tacgps@tapr.org
Message-ID: <199901110116.RAA01482@proxy4.ba.best.com>
Rendered body type: text/plain

Tom,

Many thanks for the post.

1. Any price announced yet?

2. Are you going to post to hor-sci as well?

Gordon

At 04:54 PM 1/10/99 , you wrote:
>There's been talk of the new Casio GPS wristwatch in
>sci.geo.satellite-nav.

Gordon Uber gordon@ubr.com
Reynen & Uber Web Design http://www.ubr.com/rey&ubr/
Webmaster: Clocks and Time http://www.ubr.com/clocks/

15. RE: [TACGPS:1994] Re: Casio GPS Watch

From: "Harry Burford" <hburford@airmail.net>
Date: Sun, 10 Jan 1999 23:56:17 -0600
To: <tacgps@tapr.org>
Message-ID: <000201be3d27$1a881f60$e96f6f6f@harry233>
Rendered body type: text/plain

Article from UK that was posted on another SIG said 50,000 to 70,000 Yen
which translates to a tad less than $500 or so. Other discussion was that
battery life was only about 10 hours. I wonder if the watch sets it's own
time off the GPS signal. Wouldn't that make it about 15 seconds off from
the time standard?

hb

> -----Original Message-----
> From: tacgps@tapr.org [mailto:tacgps@tapr.org]On Behalf Of Gordon Uber
> Sent: Sunday, January 10, 1999 7:21 PM
> To: tacgps@tapr.org
> Subject: [TACGPS:1994] Re: Casio GPS Watch
>
>
> Tom,
>
> Many thanks for the post.
>
> 1. Any price announced yet?
>
> 2. Are you going to post to hor-sci as well?
>
> Gordon
>
>
> At 04:54 PM 1/10/99 , you wrote:
> >There's been talk of the new Casio GPS wristwatch in
> >sci.geo.satellite-nav.
>
> Gordon Uber gordon@ubr.com
> Reynen & Uber Web Design http://www.ubr.com/rey&ubr/
> Webmaster: Clocks and Time http://www.ubr.com/clocks/
>
>

16. Re: [TACGPS:1995] Re: Casio GPS Watch

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Mon, 11 Jan 1999 14:47:47 +0000
To: tacgps@tapr.org
Message-ID: <369A0F13.EE1A6717@clark.net>
Rendered body type: text/plain

Harry Burford wrote:
>
> Article from UK that was posted on another SIG said 50,000 to 70,000 Yen
> which translates to a tad less than $500 or so. Other discussion was that
> battery life was only about 10 hours....

I'm not too surprised about the announcement. The specs, as published
on the web page at http://www.casio.com/corporate/pressdetail.cfm?ID=51
show it to be fairly bulky (by wrist watch standards) with about half the
volume of a unit like the GPSIII (as well as being a real battery hog):
  > Screen Size: .69" (H) x .82" (W), 32 x 31 dots
  > Other: Alarm, EL backlight (two-second afterglow)
  > Battery: CR2 x 1
  > Battery life: 600 individual readings minimum Approximately 10 hours
of 1-minute
  > automatic reading Approximately 3.4 hours of 1-second continuous
reading
  > Dimensions: 2.55" x 2.59" x 1.14"
  > Weight: Approximately 5.22 oz.

It would appear that the press release was written by a non-GPSer who
doesn't understand the distinction between an antenna an a microwave+DSP
receiver:
  > GPS Antenna
  >
  > Reception Frequency: 1575.42MHz
  > Reception Protocol: Parallel 8-channel
  > Measurement Cycle: 1 second minimum (continuous reading)
  > Antenna type: Flat surface, small area.

It would appear that since the screen is small, it doesn't look like it
has much mapping capability -- Text only 31x32 pixel display implies
minimal graphics. Cute toy, though. I'll buy one for my pet Furby.

Continuing, in response to Harry's comments:
> ..... I wonder if the watch sets it's own
> time off the GPS signal. Wouldn't that make it about 15 seconds
> off from the time standard?

NO NO NO -- this comment reflects a popular "urban myth". Although the

GPS system runs on GPS time (which is an integer number of seconds
different from UTC), and although leap second jumps are inserted every
~18 months, each and every GPS satellite broadcasts the current time
difference between GPS and UTC time every 30 seconds. This data is an
integral part of the 1500 bit, 50 bit/sec downlink data message.

This is the same message that conveys the almanac data for all satellites
which, when combined with an estimate of the current time and location,
allows your receiver to know which satellites to look for. And it is the
same message that provides ephemeris data for that satellite that puts it
in a ~10-20 meter box so that you can use it for navigation. The receiver
must make its navigation calculations with an internal clock that is
accurate to a small fraction of a millisecond since the satellites
move in their orbits at speeds ~7 km/sec (i.e. ~7 meters/millisecond).

   -

Soapbox time regarding the Urban Myth -- FLAME ON --

Any receiver manufacturer who fails to make use of the broadcast GPS
minus UTC correction information would have to be regarded as a morally
depraved Luddite! I doubt that Casio would have made such a grievous
and inexcusable error.

Occasionally some manufacurers sin by calling the time that they display
as "GPS Time" (GPS time has a very precise definition and differes from
UTC by an integer number of seconds) when they should use the more
correct phraseology "UTC time derived from GPS", but this is hardly
an Impeachable Offense ;<}

73, Tom

17. Re: [TACGPS:1996] Re: Casio GPS Watch

From: Jim Johnson <jjjohnson@saiph.hpl.hp.com>
Date: Mon, 11 Jan 1999 8:53:38 PST
To: tacgps@tapr.org
Message-ID: <199901111653.IAA03207@saiph.hpl.hp.com>
Rendered body type: text/plain

> Tom Clark writes:
>
> I'm not too surprised about the announcement. The specs, as published
> on the web page at http://www.casio.com/corporate/pressdetail.cfm?ID=51
> show it to be fairly bulky (by wrist watch standards) with about half the
> volume of a unit like the GPSIII (as well as being a real battery hog):
>   > Screen Size: .69" (H) x .82" (W), 32 x 31 dots
>   > Other: Alarm, EL backlight (two-second afterglow)
>   > Battery: CR2 x 1
>   > Battery life: 600 individual readings minimum Approximately 10 hours
> of 1-minute
>   > automatic reading Approximately 3.4 hours of 1-second continuous
> reading
>   > Dimensions: 2.55" x 2.59" x 1.14"
>   > Weight: Approximately 5.22 oz.
>

Tom,

  This is reminiscent of the Hewlett-Packard HP-01 watch of yesteryear.
  It was big, heavy, expensive, had an LED display, and was a battery
  hog. Didn't last long in the marketplace but was a nifty idea at the
  time. It now seems to be a collector's item.

73,
Jim W6SC
jjohnson@hpl.hp.com

18. Re: [TACGPS:1994] Re: Casio GPS Watch

From: Tom Van Baak <tvb@veritas.com>
Date: Mon, 11 Jan 1999 09:51:20 -0800
To: tacgps@tapr.org
Message-ID: <369A3A18.16FC@veritas.com>
Rendered body type: text/plain

Gordon Uber wrote:
> 2. Are you going to post to hor-sci as well?

Thanks for the reminder.

/tvb

19. RE: [TACGPS:1996] Re: Casio GPS Watch --> time standards

From: "Harry Burford" <hburford@airmail.net>
Date: Mon, 11 Jan 1999 19:46:21 -0600
To: <tacgps@tapr.org>
Message-ID: <000601be3dcd$5b2209e0$e96f6f6f@harry233>
Rendered body type: text/plain

Tom: Thanks for the clarification. I've noticed that the time I get from the GPS to set the watch is a predictable 15 seconds or so off from the time I get from other sources. In fact the new years count down shown on TV recently was off as compared to the GPS. My first thought was that I was experiencing an electronic delay as the signals flow thru the networks and the GPS HAD to be correct.

Your expenation helped clear things up. Didn't even know the 'urban myth' existed. Guess I really stepped in it. Hope the flames were in general and not targeted.

hb

> Continuing, in response to Harry's comments:
> > ..... I wonder if the watch sets it's own
> > time off the GPS signal. Wouldn't that make it about 15 seconds
> > off from the time standard?
>
> NO NO NO -- this comment reflects a popular "urban myth". Although the
> GPS system runs on GPS time (which is an integer number of seconds
> different from UTC), and although leap second jumps are inserted every
> ~18 months, each and every GPS satellite broadcasts the current time
> difference between GPS and UTC time every 30 seconds. This data is an
> integral part of the 1500 bit, 50 bit/sec downlink data message.
>
> This is the same message that conveys the almanac data for all satellites
> which, when combined with an estimate of the current time and location,
> allows your receiver to know which satellites to look for. And it is the
> same message that provides ephemeris data for that satellite that puts it
> in a ~10-20 meter box so that you can use it for navigation. The receiver
> must make its navigation calculations with an internal clock that is
> accurate to a small fraction of a millisecond since the satellites
> move in their orbits at speeds ~7 km/sec (i.e. ~7 meters/millisecond).
>
>   -
>
> Soapbox time regarding the Urban Myth -- FLAME ON --
>
> Any receiver manufacturer who fails to make use of the broadcast GPS
> minus UTC correction information would have to be regarded as a morally
> depraved Luddite! I doubt that Casio would have made such a grievous
> and inexcusable error.
>
> Occasionally some manufacurers sin by calling the time that they display
> as "GPS Time" (GPS time has a very precise definition and differes from
> UTC by an integer number of seconds) when they should use the more
> correct phraseology "UTC time derived from GPS", but this is hardly
> an Impeachable Offense ;<}
>
> 73, Tom
>
>

20. Furby GPS

From: "G. Beat" <gregory.beat@mediaone.net>
Date: Mon, 11 Jan 1999 21:05:40 -0600
To: <tacgps@tapr.org>
Message-ID: <001a01be3dd8$6f994ae0$eb988318@clarke.ce.mediaone.net>
Rendered body type: text/plain

> Dr Thomas A Clark
>It would appear that since the screen is small, it doesn't look like it
>has much mapping capability -- Text only 31x32 pixel display implies
>minimal graphics. Cute toy, though. I'll buy one for my pet Furby.

Tom's comment begs the question --- why would a Furby want to know where it is?

:)

G. Beat

21. two from one

From: Dan Hinz <dan.hinz@ieee.org>
Date: Mon, 11 Jan 1999 20:51:44 -0800
To: tacgps@tapr.org, tac32@tapr.org
Message-ID: <369AD4E0.BF2817A2@ieee.org>
Rendered body type: text/plain

I have the luxury of having a "spare" P90 Win95 PC to collect GPS data.
I
am using the TAC-2 interface board.

I would like to be able to run both TAC32 and SAWatch from one receiver
on
the same COM port. Is there a way to do this or does anyone know of a
software program that would allow me to share the data for the two
programs? I realize that I would have to be smart enough to not try and

"talk to" the GPS from both S/W, but would like both S/W to "listen to"
the
GPS.

I have tried installing a board with two additional COM ports and after
much wrestling can only get the computer to recognize one of the "New"
com
ports.

Any suggestions?
thanks,
Dan W6LSN

22. case for TAPR DGPS board

From: mpetz@ccm.stlcc.cc.mo.us (Michael Petz)
Date: Tue, 12 Jan 1999 08:57:38 -0600
To: tacgps@tapr.org
Message-ID: <2.2.16.19990112085841.4c5fddec@ccm.stlcc.cc.mo.us>
Rendered body type: text/plain

Has anyone obtained a case for the TAPR DGPS board and daughter GPS
board that was shown at Dayton '98? I looked at the TAPR site and did not
see the board or coax assemble listed. Does anyone know where I can get this
cast aluminum box with the machined holes for the antenna, power, and DB-9
connector? I would also like to get the coax assemble, but this is not as
important as the case.

TNX
Michael
KA9HNT
mpetz@ccm.stlcc.cc.mo.us

23. [TACGPS:2001] two from one

From: Donald E Haselwood <dhaselwood@ij.net>
Date: Tue, 12 Jan 1999 06:39:47 -0500
To: tacgps@tapr.org
Message-ID: <3.0.6.32.19990112063947.007b29e0@POP3.ij.net>
Rendered body type: text/plain

Dan,

Sounds like feeding two ports should work. I have a P-100 and added a
4-port card that I got from:

http://www.byterunner.com

The four additional ports can share one IRQ. Not all comport boards are
designed to share one IRQ, however. Byterunner's web site has some
instructions for setting up comports that share one IRQ (a few gymnastics,
but not complicated).

The main problem I have is that most programs are not setup to allow
selecting port numbers greater than COM4. Fortunately, TAC32 does. I
have't looked at SAWatch, but I assume you have one free port in the COM1-4
range that could be used for it.

73's

Don, W4DH

At 11:11 PM 1/11/99 -0600, you wrote:
>I have the luxury of having a "spare" P90 Win95 PC to collect GPS data.
>I
>am using the TAC-2 interface board.
>
>I would like to be able to run both TAC32 and SAWatch from one receiver
>on
>the same COM port. Is there a way to do this or does anyone know of a
>software program that would allow me to share the data for the two
>programs? I realize that I would have to be smart enough to not try and
>
>"talk to" the GPS from both S/W, but would like both S/W to "listen to"
>the
>GPS.
>
>I have tried installing a board with two additional COM ports and after
>much wrestling can only get the computer to recognize one of the "New"
>com
>ports.
>
>Any suggestions?
>thanks,
>Dan W6LSN

24. Re: [TACGPS:2002] case for TAPR DGPS board

From: "Doug McKinney" <buoy@redshift.com>
Date: Tue, 12 Jan 1999 07:57:43 -0800
To: <tacgps@tapr.org>
Message-ID: <000e01be3e44$5809fb60$b5c6cccf@buoy.mcktech.com>
Rendered body type: text/plain

-----Original Message-----
From: Michael Petz <mpetz@ccm.stlcc.cc.mo.us>
To: tacgps@tapr.org <tacgps@tapr.org>
Date: Tuesday, January 12, 1999 7:12 AM
Subject: [TACGPS:2002] case for TAPR DGPS board

>   Has anyone obtained a case for the TAPR DGPS board and daughter GPS
>board that was shown at Dayton '98? I looked at the TAPR site and did not
>see the board or coax assemble listed. Does anyone know where I can get
>this
>cast aluminum box with the machined holes for the antenna, power, and DB-9
>connector? I would also like to get the coax assemble, but this is not as
>important as the case.
>
>   TNX
>   Michael
>   KA9HNT
>   mpetz@ccm.stlcc.cc.mo.us
>
It is I, Doug KC3RL, who has the cases. Without significant demand, an
inventory is not economical for TAPR. I have 14 cases machined and I need
to make the antenna cables. Do you have the DGPSIB, if so then you only
need the case, antenna cable, the 2 other case connectors and instructions
for connection. Let me know and I can give you a cost.
73's
Doug
831-663-4999
Doug@mt.to

25. RE: [TACGPS:2000] Furby GPS

From: "Ron L. Sparks" <spark51@ibm.net>
Date: Tue, 12 Jan 1999 10:53:13 -0600
To: <tacgps@tapr.org>
Message-ID: <001301be3e4c$0b0b9e60$02651964@host-rls.fbtc.net>
Rendered body type: text/plain

Because it has to make a lot of corporate meetings in strange cities to
discuss how to keep the Furby market value high in the face of stiff
competition from Beanie Babies. Beanie Babies are known for their
aggressive use of technology to leverage their positions vis-a-vis
stakeholder concerns. Their recent reorganization has allowed them to
flatten their organization maximizing the available interface time and
streamlining throughput of relevant societal concepts from management
creative teaming. If the Furbys don't vigorously attack market share

through an improvement of technology application they could easily slip into
the "garage sale" niche relegating the entire organization to a backwater
status.

<tongue so far in cheek it hurts - laughing out loud>

Ron

-----Original Message-----
From: tacgps@tapr.org [mailto:tacgps@tapr.org] On Behalf Of G. Beat
Sent: Monday, January 11, 1999 9:09 PM
To: tacgps@tapr.org
Subject: [TACGPS:2000] Furby GPS

> Dr Thomas A Clark
>It would appear that since the screen is small, it doesn't look like it
>has much mapping capability -- Text only 31x32 pixel display implies
>minimal graphics. Cute toy, though. I'll buy one for my pet Furby.

Tom's comment begs the question --- why would a Furby want to know where it
is?
:)

G. Beat

26. Question - Racal-Dana Counter

From: Gary Sanders <gsanders@gte.net>
Date: Wed, 13 Jan 1999 00:09:59 -0500
To: TAC Newsgroup <tacgps@tapr.org>
Message-ID: <369C2AA7.5766F3A9@gte.net>
Rendered body type: text/plain

Hello all,

I just picked up a Racal-Dana model 1994 universal counter
with option 04E (so-called High Stability Precision Frequency
Standard), and was wondering if anybody knows if this timebase
is capable of being modified to be driven by Brooks Shera's
GPS derived controller. The oscillator module looks like it
has just 3 wires going to it's circuit board - power, ground
and RF out.

Normally I'd just order a manual from the manufacturer and
check the schematic, but when I called them, they quoted me
100 bucks for "a manual", and they couldn't tell me if it
was an operator's or a service manual! (Needless to say, a
hundred bucks would be a bit much to pay to learn which
buttons to push.)

Thanks in advance,

Gary Sanders

27. Re: [TACGPS:2001] two from one

From: Jeff Vollin <barnie@flash.net>
Date: Tue, 12 Jan 1999 23:03:49 -0700
To: tacgps@tapr.org
Message-ID: <369C3745.9E29B78D@flash.net>
Rendered body type: text/plain

I assume your question is more to do with the GPS's than the COM ports. If
you are running TAC32 in the timing mode, i.e., 0-D position hold mode, the
GPS
is thinking it is at the position you gave it for reference and using all
its degrees of
freedom to compute the best possible time solution. I would think this
would preclude
the nav data you need for SA Watch. If you are willing to put the GPS in
the 3-D
nav mode and sacrifice the precision timing, you can do what you want. In
that case,
you can tell SA Watch to look for generic NMEA and it will decode the
results
from the GPS without ever talking to it. You may have to wire a special
cable to
feed the data out from the GPS to both COM ports data in and the data out
from the
TAC32 COM port to the GPS. I did this using a Garmin GPS just to see if it
would

work, with no regard for precision timing.

Jeff Vollin, KC6WFU

Dan Hinz wrote:

> I have the luxury of having a "spare" P90 Win95 PC to collect GPS data.
> I
> am using the TAC-2 interface board.
>
> I would like to be able to run both TAC32 and SAWatch from one receiver
> on
> the same COM port. Is there a way to do this or does anyone know of a
> software program that would allow me to share the data for the two
> programs? I realize that I would have to be smart enough to not try and
>
> "talk to" the GPS from both S/W, but would like both S/W to "listen to"
> the
> GPS.
>
> I have tried installing a board with two additional COM ports and after
> much wrestling can only get the computer to recognize one of the "New"
> com
> ports.
>
> Any suggestions?
> thanks,
> Dan W6LSN

28. Re: [TACGPS:2007] Re: two from one

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Wed, 13 Jan 1999 15:57:57 -0500
To: tacgps@tapr.org
Message-ID: <369D08D5.8806C69D@tomcat.gsfc.nasa.gov>
Rendered body type: text/plain

In addition to Jeff Vollin's comments to Dan, W6LSN:
> [snip]
> you can tell SA Watch to look for generic NMEA and it will decode
> the results from the GPS without ever talking to it. You may have
> to wire a special cable to feed the data out from the GPS to both
> COM ports data in and the data out from the TAC32 COM port to the GPS.

Dan said he was running a full TAC-2. My TAC-2 board allows for
two computer connections already. The logic on the board has an OR
gate to accept inputs to the receiver on either/both Port #1 &/or
Port #2. The TAC-2 logic includes a "squelch" function that disables
port #2 when data is being received on Port #1 -- thus Port #1 has
priority and squelches Port #2. To do what Dan suggested, TAC32
MUST be set up in the 4800 baud Motorola NMEA mode, and I'd suggest
it use the TAC-2 priority Port #1. SA Watch should be usable on port
#2 in its Motorola mode, but generic NMEA should be OK also. As Jeff
pointed out, the main pupose for SA Watch is to study the apparent
motion of the fixed receiver running in 3D positioning mode. And
3D mode will give poorer clock -- you can see the difference in
ftp://aleph.gsfc.nasa.gov/GPS/totally.accurate.clock/oso-d270.gif

73, Tom

29. Re: [TACGPS:1996] GPS vs. UTC

From: mdmiller@eaze.net
Date: Thu, 14 Jan 1999 07:55:59 -0600
To: tacgps@tapr.org
Message-ID: <3.0.5.32.19990114075559.007dbec0@mail.eaze.net>
Rendered body type: text/plain

Tom Clark wrote:
>Occasionally some manufacurers sin by calling the time that they display
>as "GPS Time" (GPS time has a very precise definition and differes from
>UTC by an integer number of seconds) when they should use the more
>correct phraseology "UTC time derived from GPS", but this is hardly
>an Impeachable Offense ;<}

I have also seen the reverse happen. In the paging industry we use GPS
time to sychronize data bits for simulcast transmission within a system and
frame synchronization inter-system. One manufacturer labels the time on
transmitter control equipment UTC when in fact it is GPS.

The FLEX TM paging protocol requires the pager to remain synchronized with

the infrastructure. Older protocols like POCSAG do not require this. GPS time is used over UTC because of the leap second that we are all familiar with. The FLEX TM protocol requires the the pager stay sychronized with the paging system to within 1 msec. A 1 second change in the system could cause all pagers in a system to be deaf for as long a 40 minutes.

Another paging infrastructure manufacturer made the mistake of using UTC time in the early implementation of FLEX TM and had to send software patches to to customers every time a leap second was to occur. Now everyone is (or should be) on the same sheet of music. There are many stories like this in the telecommunications industry.

73
Mark Miller
N5RFX

30. Re: [TACGPS:2005] TACGPS digest 381

From: "Doug McKinney" <buoy@redshift.com>
Date: Thu, 14 Jan 1999 10:20:41 -0800
To: "by way of Michael Petz <mpetz@ccm.stlcc.cc.mo.us>" <tacgps@tapr.org>
Message-ID: <001a01be3fea$9a489de0$7ec6cccf@buoy.mcktech.com>
Rendered body type: text/plain

-----Original Message-----
From: by way of Michael Petz <mpetz@ccm.stlcc.cc.mo.us> <tacgps@tapr.org>
To: Doug@mt.to <Doug@mt.to>
Date: Thursday, January 14, 1999 7:49 AM
Subject: [TACGPS:2005] TACGPS digest 381

>I have the TAPR DGPS board and GPS mounted together and up and working. I
>do need the case and the coax assembly. What are the the "other two case
>connectors"? There would be two DB-9 connectors and the power, right? Is
>there a hole for the LED also? Let me know about the price and
availability.
>
Michael, the other case connectors are power, LED and Phone jack (or if preferred a RCA jack) for DGPS out. At www.tapr.org/~n7hpr/mcktech/ is a picture of the older enclosure format. The LED is added next to the antenna and the power jack is now a 4 pin screw down (mic jack). cost with shipping and handling is $50.
Doug KC3RL 831-663-4999

     Tnx
>   Michael
>   KA9HNT
>   mpetz@ccm.stlcc.cc.mo.us
>
>-----Original Message-----
>From: Michael Petz <mpetz@ccm.stlcc.cc.mo.us>
>To: tacgps@tapr.org <tacgps@tapr.org>
>Date: Tuesday, January 12, 1999 7:12 AM
>Subject: [TACGPS:2002] case for TAPR DGPS board
>
>
>>   Has anyone obtained a case for the TAPR DGPS board and daughter
GPS
>>board that was shown at Dayton '98? I looked at the TAPR site and did
not
>>see the board or coax assemble listed. Does anyone know where I can get
>this
>>cast aluminum box with the machined holes for the antenna, power, and
DB-9
>>connector? I would also like to get the coax assemble, but this is not as
>>important as the case.
>>
>>   TNX
>>   Michael
>>   KA9HNT
>>   mpetz@ccm.stlcc.cc.mo.us
>>
>It is I, Doug KC3RL, who has the cases. Without significant demand, an
>inventory is not economical for TAPR. I have 14 cases machined and I need
>to make the antenna cables. Do you have the DGPSIB, if so then you only
>need the case, antenna cable, the 2 other case connectors and instructions

>for connection. Let me know and I can give you a cost.
>73's
>Doug
>831-663-4999
>Doug@mt.to
>
>
>

31. What TAPR Directory?

From: Patrick MacKeown <pgm@gti.noc.demon.net>
Date: Fri, 15 Jan 1999 16:09:54 +0000 (GMT)
To: help@tapr.org, pgm@demon.net
Cc: tacgps@tapr.org
Message-ID: <199901151609.QAA09872@gti.noc.demon.net>
Rendered body type: text/plain

Hi

The big yellow "Readme first" sheet of paper which comes with the
TAC2 kit says look in the TAPR Directory for information about more help! What TAPR Directory is it referring to? And the three disks
which came with my TAC2 kit are odd!

Disk 1) TAC-32 v2.0 disk 1 of 2   cnsclock.pdf
Disk 2) TAC-32 v2.0 disk 2 of 2   data2.cab
Disk 3) TAC-32 v2.0 Documentation (pdf) cnsclock.pdf

 I don't know what data2.cab can do for me, my system is unix and
are Disk 1 Disk 3 supposed to be the same? And they appear to explain all about a CNS Clock and TAC32 which I don't have. Am I supposed
to have information which helps me with the assembly of the TAC2 PPS
conversion circuit board? Because that's all I've bought from you.

I have two extremely useful looking documents:
1) Totally Accurate Clock II Assembly Manual
2) TAC-2 Operations Manual

 Am I to work from these and junk the three disks or is there other
useful stuff which ought to have arrived on floppy disks and never
did?

Regards
patmac
--
Demon Internet system administrator timelord@demon.net DFAX +441813714009
pgp keys:finger: pgm@demon.net (demon) pgm@pgm.noc.demon.net (cityscape)
322 Regents Park Road, Finchley, London N3 2QQ, England (0181-371-1000)

32. The width of my PPS signal

From: Patrick MacKeown <pgm@gti.noc.demon.net>
Date: Fri, 15 Jan 1999 16:41:51 +0000 (GMT)
To: tapr@tapr.org, jeff@truetime.com
Cc: tacgps@tapr.org
Message-ID: <199901151641.QAA10453@gti.noc.demon.net>
Rendered body type: text/plain

Hi Jeff

I hope this reaches Jeff MacDonald at Truetime! If not please can
this message be passed either to him or Greg Kret.

-Q:
  My Truetime XL-AK receiver has a 50 ohm 1PPS, 20 us wide
  (which I believe to be 5v)

  My TAC-2 kit assumes a 1PPS signal 100 msec or 200 msec
  (http://www.tapr.org/tapr/html/tac2.html)

Is there a chance that the TAC-2 will miss the signal altogether?

Regards
patmac
--
Demon Internet system administrator timelord@demon.net DFAX +441813714009
pgp keys:finger: pgm@demon.net (demon) pgm@pgm.noc.demon.net (cityscape)
322 Regents Park Road, Finchley, London N3 2QQ, England (0181-371-1000)

33. Re: [TACGPS:2011] What TAPR Directory?

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Fri, 15 Jan 1999 11:31:48 -0600
To: tacgps@tapr.org
Cc: Dorothy Jones <ka5dwr@tapr.org>
Message-ID: <v04020a00b2c51e71e3e4@[207.8.125.50]>
Rendered body type: text/plain

It looks like a disk image 3 got a Disk Label of 1 attached to it during duplication of disks at at the office. I just called up and we went through the pile and found two other disks like this in the Disk 1 box and got them corrected.

I was worried that we had the wrong disk image loaded on the office system, but that wasn't the case.

Sorry about this little mistake.

We don't keep the TAC-32 disk iamges on the TAPR site, but the TAC-32 v2 image is kept on
http://www.cnssys.com/tac32/ and in ftp://ftp.tapr.org/tac2/Tac32v2

If getting it off the CNS site will not work, please let Dorothy know and we can send you another Disk 1.

As to the TAC-2 directory it is ftp://ftp.tapr.org/tac2

You'll find most of the support you need on this list.

Cheers - Greg

>Hi
>
>The big yellow "Readme first" sheet of paper which comes with the
>TAC2 kit says look in the TAPR Directory for information about more help!
>What TAPR Directory is it referring to? And the three disks
>which came with my TAC2 kit are odd!
>
>Disk 1) TAC-32 v2.0 disk 1 of 2 cnsclock.pdf
>Disk 2) TAC-32 v2.0 disk 2 of 2 data2.cab
>Disk 3) TAC-32 v2.0 Documentation (pdf) cnsclock.pdf
>
> I don't know what data2.cab can do for me, my system is unix and
>are Disk 1 Disk 3 supposed to be the same? And they appear to explain all
>about a CNS Clock and TAC32 which I don't have. Am I supposed
>to have information which helps me with the assembly of the TAC2 PPS
>conversion circuit board? Because that's all I've bought from you.
>
>I have two extremely useful looking documents:
>1) Totally Accurate Clock II Assembly Manual
>2) TAC-2 Operations Manual
>
> Am I to work from these and junk the three disks or is there other
>useful stuff which ought to have arrived on floppy disks and never
>did?
>
>
>Regards
>patmac
>--
>Demon Internet system administrator timelord@demon.net DFAX +441813714009
>pgp keys:finger: pgm@demon.net (demon) pgm@pgm.noc.demon.net (cityscape)
>322 Regents Park Road, Finchley, London N3 2QQ, England (0181-371-1000)

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

34. Re: [TACGPS:2013] Re: What TAPR Directory?

From: User PgmPatrick MacKeown <pgm@ns0.help-desk.co.uk>
Date: Fri, 15 Jan 1999 17:53:33 +0000 (GMT)
To: tacgps@tapr.org
Message-ID: <199901151753.RAA16968@ns0.help-desk.co.uk>
Rendered body type: text/plain

OK :-) but it still seems like you referring me to TAC32 help and
I never bought a TAC32 from you. I suspect I just need the
tac2 directory. :-)
  By the way have you seen my next question about the width of my
1PPS signal being 10000 times smaller than the 200 micro second
signal the TAC-2 is expecting. How am I going to ensure the
circuit doesn't completely miss the signal?
pat

> If getting it off the CNS site will not work, please let Dorothy know and
> we can send you another Disk 1.
>
> As to the TAC-2 directory it is ftp://ftp.tapr.org/tac2
>

35. Re: [TACGPS:2014] Re: What TAPR Directory?

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Fri, 15 Jan 1999 12:10:36 -0600
To: tacgps@tapr.org
Message-ID: <v04020a04b2c53365d302@[207.8.125.50]>
Rendered body type: text/plain

As of January, TAPR is now providing an evaluation copy of TAC-32 with the
TAC-2 kits. This has replaced the previous Showtime software that was
originally provided with TAC-2.

You can use the evaluation copy of TAC-32 for up to 30 days. This allows
builders of the TAC-2 kit to test their kits as soon as they get it built
and operational. You can license after the eval time is up if you need to,
but it isn't required.

Your post indicated that you got a mislabled Disk 1. In order to get
TAC-32 operational, you'll need to get the Disk 1 image off the TAPR site:
ftp://ftp.tapr.org/tac2/Tac32v2/Disks/

As to the width of the signal issue, I'll have to defer to one of the
experts on the list that know these things. You will probably see
responses later today when people on the list start getting home from work.

Cheers - Greg

>OK :-) but it still seems like you referring me to TAC32 help and
>I never bought a TAC32 from you. I suspect I just need the
>tac2 directory. :-)
> By the way have you seen my next question about the width of my
>1PPS signal being 10000 times smaller than the 200 micro second
>signal the TAC-2 is expecting. How am I going to ensure the
>circuit doesn't completely miss the signal?
>pat
>
>
>> If getting it off the CNS site will not work, please let Dorothy know and
>> we can send you another Disk 1.
>>
>> As to the TAC-2 directory it is ftp://ftp.tapr.org/tac2
>>

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

36. Re: [TACGPS:2015] Re: What TAPR Directory?

From: Patrick MacKeown <pgm@gti.noc.demon.net>
Date: Fri, 15 Jan 1999 19:22:15 +0000 (GMT)
To: tacgps@tapr.org
Message-ID: <199901151922.TAA12497@gti.noc.demon.net>
Rendered body type: text/plain

Ah
I see where you're headed now :-)

pat

> As of January, TAPR is now providing an evaluation copy of TAC-32 with the
> TAC-2 kits. This has replaced the previous Showtime software that was
> originally provided with TAC-2.
>
> You can use the evaluation copy of TAC-32 for up to 30 days. This allows

> builders of the TAC-2 kit to test their kits as soon as they get it built
> and operational. You can license after the eval time is up if you need to,
> but it isn't required.
>
> Your post indicated that you got a mislabled Disk 1. In order to get
> TAC-32 operational, you'll need to get the Disk 1 image off the TAPR site:
> ftp://ftp.tapr.org/tac2/Tac32v2/Disks/
>
> As to the width of the signal issue, I'll have to defer to one of the
> experts on the list that know these things. You will probably see
> responses later today when people on the list start getting home from work.
>
> Cheers - Greg
>
> >OK :-) but it still seems like you referring me to TAC32 help and
> >I never bought a TAC32 from you. I suspect I just need the
> >tac2 directory. :-)
> > By the way have you seen my next question about the width of my
> >1PPS signal being 10000 times smaller than the 200 micro second
> >signal the TAC-2 is expecting. How am I going to ensure the
> >circuit doesn't completely miss the signal?
> >pat
> >
> >
> >> If getting it off the CNS site will not work, please let Dorothy know and
> >> we can send you another Disk 1.
> >>
> >> As to the TAC-2 directory it is ftp://ftp.tapr.org/tac2
> >>
>
> -----
> Greg Jones, WD5IVD   Austin, Texas
> wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd
>
>

37. Re: [TACGPS:2015] Re: What TAPR Directory?

From: Steve Sampson <ssampson@usa-site.net>
Date: Fri, 15 Jan 1999 18:37:06 -0600 (CST)
To: tacgps@tapr.org
Message-ID: <199901160037.SAA26794@access.usa-site.net>
Rendered body type: text/plain

This is a great piece of software. I have received all the
updates the last year, and every version is still as stable
as the first, with whatever added capability was added.

If you are interested in GPS time, or DGPS, this is the
software that does all the right stuff, and it's cheap.

Because of that I didn't have to remember how to run DOS
with Showtime :-)

Thanks for TAPR distributing it, and CNS systems for
programming the inexpensive solution.

Steve

> As of January, TAPR is now providing an evaluation copy of TAC-32 with the
> TAC-2 kits. This has replaced the previous Showtime software that was
> originally provided with TAC-2.

38. UT vs. VP Oncore.

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Sun, 17 Jan 1999 21:44:54 +1100
To: tacgps@tapr.org
Message-ID: <36A1BF25.56F1A673@ozemail.com.au>
Rendered body type: text/plain

G'Day

I purchased 2 Oncore's mail order, for use on APRS. Unfortunately when I
got them they turned out to be the UT version which does not have NMEA.
They do have a far more accurate 1pps and actually have a 100 pps
output.

I was wondering if anyone on the list was wanting to swap a UT for a VP
oncore. I have no idea of the retail cost of the UT so sorry if this is
a stupid suggestion.

Darryl VK2TDS

39. Re: [TACGPS:2015] Re: What TAPR Directory?

From: User PgmPatrick MacKeown <pgm@ns0.help-desk.co.uk>
Date: Sun, 17 Jan 1999 12:36:19 +0000 (GMT)
To: tacgps@tapr.org
Message-ID: <199901171236.MAA17604@ns0.help-desk.co.uk>
Rendered body type: text/plain

No-one seems to know about the width of my signal, what do you think I should
do next? It's really urgent, this project is several months over due.

pat

> As to the width of the signal issue, I'll have to defer to one of the
> experts on the list that know these things. You will probably see
> responses later today when people on the list start getting home from work.
>
> Cheers - Greg
>

40. Re: [TACGPS:2019] Re: What TAPR Directory?

From: Steve Sampson <ssampson@usa-site.net>
Date: Sun, 17 Jan 1999 09:00:54 -0600 (CST)
To: tacgps@tapr.org
Message-ID: <199901171500.JAA04696@access.usa-site.net>
Rendered body type: text/plain

Width of what signal? GPS?

>
> No-one seems to know about the width of my signal, what do you think I should
> do next? It's really urgent, this project is several months over due.
>
> pat
>
> > As to the width of the signal issue, I'll have to defer to one of the
> > experts on the list that know these things. You will probably see
> > responses later today when people on the list start getting home from work.
> >
> > Cheers - Greg
> >
>

41. Re: [TACGPS:2020] Re: What TAPR Directory?

From: User PgmPatrick MacKeown <pgm@ns0.help-desk.co.uk>
Date: Sun, 17 Jan 1999 15:21:49 +0000 (GMT)
To: tacgps@tapr.org
Message-ID: <199901171521.PAA19480@ns0.help-desk.co.uk>
Rendered body type: text/plain

No, BNC 5v 1PPS 20 usec wide. That's what I wanted the TAC-2 for to convert
the rising-edge signal to an RS232 input. But I didn't realise the TAC-2 was
expecting a rising-edge signal between 100 msec and 200 msec leading me to
fear that building the kit may serve no purpose if it can't detect my tiny
signal
pat

> Width of what signal? GPS?
>
>
>
>
> >
> > No-one seems to know about the width of my signal, what do you think I should
> > do next? It's really urgent, this project is several months over due.
> >
> > pat
> >
> > > As to the width of the signal issue, I'll have to defer to one of the
> > > experts on the list that know these things. You will probably see
> > > responses later today when people on the list start getting home from work.
> > >

> > > Cheers - Greg
> > >
> >
>
>

42. RE: [TACGPS:2021] Re: What TAPR Directory?

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sun, 17 Jan 1999 10:45:36 -0500
To: <tacgps@tapr.org>
Message-ID: <000101be4230$6d17eae0$101161cf@rick.cnssys.com>
Rendered body type: text/plain

Implement the optional pulse stretcher circuit on the Tac-2 board that was designed for the Trimble OEM receiver, which has a similar problem.

Rick
WB2TNL

-----Original Message-----
From: tacgps@tapr.org [mailto:tacgps@tapr.org]On Behalf Of User PgmPatrick MacKeown
Sent: Sunday, January 17, 1999 10:26 AM
To: tacgps@tapr.org
Subject: [TACGPS:2021] Re: What TAPR Directory?

No, BNC 5v 1PPS 20 usec wide. That's what I wanted the TAC-2 for to convert the rising-edge signal to an RS232 input. But I didn't realise the TAC-2 was expecting a rising-edge signal between 100 msec and 200 msec leading me to fear that building the kit may serve no purpose if it can't detect my tiny signal
pat

> Width of what signal? GPS?
>
>
>
>
> >
> > No-one seems to know about the width of my signal, what do you think I should
> > do next? It's really urgent, this project is several months over due.
> >
> > pat
> >
> > > As to the width of the signal issue, I'll have to defer to one of the
> > > experts on the list that know these things. You will probably see
> > > responses later today when people on the list start getting home from work.
> > >
> > > Cheers - Greg
> > >
> >
>
>

43. Expanding 1PPS signal width

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Sun, 17 Jan 1999 10:53:39 -0500
To: tacgps@tapr.org
Message-ID: <3.0.6.32.19990117105339.00912430@pop.gate.net>
Rendered body type: text/plain

At 09:26 AM 1/17/99 -0600, you wrote:
>No, BNC 5v 1PPS 20 usec wide. That's what I wanted the TAC-2 for to convert
>the rising-edge signal to an RS232 input. But I didn't realise the TAC-2 was
>expecting a rising-edge signal between 100 msec and 200 msec leading me to
>fear that building the kit may serve no purpose if it can't detect my tiny
>signal
>pat

Pat, look on page 2 of 5 of the TAC-2 schematics. There you will see an optional 555 timer that can be installed and configured as a one-shot. The Trimble SK8 GPS receiver also has a very short pulse width and this circutry was put on the TAC-2 for that purpose. There is a discrption of the circuitry on page 15 of the assembly manual.

- Steve
(n7hpr@tapr.org)
(n7hpr@amsat.org)

44. Re: [TACGPS:2023] Expanding 1PPS signal width

From: User PgmPatrick MacKeown <pgm@ns0.help-desk.co.uk>
Date: Sun, 17 Jan 1999 16:03:05 +0000 (GMT)
To: tacgps@tapr.org
Message-ID: <199901171603.QAA19988@ns0.help-desk.co.uk>
Rendered body type: text/plain

Right o'
Thanks a million everyone

pat

> At 09:26 AM 1/17/99 -0600, you wrote:
> >No, BNC 5v 1PPS 20 usec wide. That's what I wanted the TAC-2 for to convert
> >the rising-edge signal to an RS232 input. But I didn't realise the TAC-2 was
> >expecting a rising-edge signal between 100 msec and 200 msec leading me to
> >fear that building the kit may serve no purpose if it can't detect my tiny
> >signal
> >pat
> >
> >
> Pat, look on page 2 of 5 of the TAC-2 schematics. There you will see an
> optional 555 timer that can be installed and configured as a one-shot. The
> Trimble SK8 GPS receiver also has a very short pulse width and this
> circutry was put on the TAC-2 for that purpose. There is a discrption of
> the circuitry on page 15 of the assembly manual.
> >
> >
> > - Steve
> > (n7hpr@tapr.org)
> > (n7hpr@amsat.org)
> >
> >

45. Re: [TACGPS:2021] Re: What TAPR Directory?

From: Brooks Shera <ebs@lanl.gov>
Date: Sun, 17 Jan 1999 09:20:31 -0700
To: <tacgps@tapr.org>
Message-ID: <199901171616.JAA28959@lawyer.lanl.gov>
Rendered body type: text/plain

The drawing I have of the TAC-2 board shows space for a 7555 pulse
stretcher (U5) that appearently was included to solve problems like yours.

Brooks

>No, BNC 5v 1PPS 20 usec wide. That's what I wanted the TAC-2 for to convert
>the rising-edge signal to an RS232 input. But I didn't realise the TAC-2 was
>expecting a rising-edge signal between 100 msec and 200 msec leading me to
>fear that building the kit may serve no purpose if it can't detect my tiny
>signal
>pat
>
>
>> Width of what signal? GPS?
>>
>>
>>
>>
>> >
>> > No-one seems to know about the width of my signal, what do you think I
>should
>> > do next? It's really urgent, this project is several months over due.
>> >
>> > pat
>> >
>> > > As to the width of the signal issue, I'll have to defer to one of the
>> > > experts on the list that know these things. You will probably see
>> > > responses later today when people on the list start getting home from
>work.
>> > >
>> > > Cheers - Greg

>> > >
>> >
>>
>>

46. Re: [TACGPS:2023] Expanding 1PPS signal width

From: "Eric A. Cottrell" <eac@shore.net>
Date: Sun, 17 Jan 1999 22:01:35 -0500
To: tacgps@tapr.org
Message-ID: <36A2A40F.5DBDC611@shore.net>
Rendered body type: text/plain

Steven R. Bible wrote:
> Pat, look on page 2 of 5 of the TAC-2 schematics. There you will see an
> optional 555 timer that can be installed and configured as a one-shot. The

Hello,

Make sure you get one of the new Y2K compliant 555 timer chips 8->.

73 Eric eac@shore.net WB1HBU

47. Re: [TACGPS:2026] Re: Expanding 1PPS signal width

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Sun, 17 Jan 1999 22:34:29 -0500
To: tacgps@tapr.org
Message-ID: <3.0.6.32.19990117223429.009f99c0@pop.gate.net>
Rendered body type: text/plain

At 09:05 PM 1/17/99 -0600, you wrote:
>Steven R. Bible wrote:
>> Pat, look on page 2 of 5 of the TAC-2 schematics. There you will see an
>> optional 555 timer that can be installed and configured as a one-shot. The
>
>Hello,
>
>Make sure you get one of the new Y2K compliant 555 timer chips 8->.

Eric, you've obviously have Y2K on the brain! :-O

 - Steve
 (n7hpr@tapr.org)
 (n7hpr@amsat.org)

48. Re: [TACGPS:2027] Re: Expanding 1PPS signal width

From: "Eric A. Cottrell" <eac@shore.net>
Date: Sun, 17 Jan 1999 23:16:52 -0500
To: tacgps@tapr.org
Message-ID: <36A2B5B4.A865EC72@shore.net>
Rendered body type: text/plain

Steven R. Bible wrote:
> Eric, you've obviously have Y2K on the brain! :-O

Hello,

I am just passing on what I heard from an "expert" 8->.

I am considering going into business selling corrected
555 and 556 timer chips.

73 Eric eac@shore.net WB1HBU

49. IRS Virus

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 17 Jan 1999 22:29:50 -0600
To: <tacgps@tapr.org>
Message-ID: <001701be429b$300ee840$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

WARNING! PLEASE READ IMMEDIATELY!
        THIS IS SERIOUS!

If you get an envelope from a company called the
Internal Revenue Service," DO NOT OPEN IT!
This group operates a scam around this time

every year. Their letter claims that you owe
them money, which they will take and use to pay
for the operation of essential functions of the
United States government. This is untrue! The
money the IRS collects is used to fund various
other corporations which depend on subsidies
to stay in business.

This organization has ties to another shady outfit
called the Social Security Administration, who
claim to take money from your regular
paychecks and save it for your retirement. In
truth, the SSA uses the money to pay for the
same misguided corporate welfare the IRS
helps mastermind.

These scam artists have bilked honest,
hard working Americans out of billions of
dollars (over 5000 Billion). Don't be among them!

DISCLAIMER: If you are the IRS, I only forwarded
             this message as I received it.

50. Why am I giving MAX232 ten volts?

From: User PgmPatrick MacKeown <pgm@ns0.help-desk.co.uk>
Date: Mon, 18 Jan 1999 12:11:02 +0000 (GMT)
To: tacgps@tapr.org
Message-ID: <199901181211.MAA03264@ns0.help-desk.co.uk>
Rendered body type: text/plain

Hi folks?

Why is page 10 of the TAC-2 assembly manual asking me to check
the MAX232 at ten volts to check my PPS signal level, when my
PPS signal level is 5 volts?

pat

51. Re: [TACGPS:2030] Why am I giving MAX232 ten volts?

From: Lyle Johnson <lylej@azstarnet.com>
Date: Mon, 18 Jan 1999 07:01:43 -0700
To: tacgps@tapr.org
Message-ID: <3.0.5.32.19990118070143.00930b80@pop.azstarnet.com>
Rendered body type: text/plain

At 06:15 AM 1/18/99 -0600, you wrote:
>Hi folks?
>
>Why is page 10 of the TAC-2 assembly manual asking me to check
>the MAX232 at ten volts to check my PPS signal level, when my
>PPS signal level is 5 volts?
>
>pat
>

The MAX232 includes a TTL to RS232 level converter. It takes 0/+5V levels
and converts them to approximately +10/-10V respectively.

On receive, it takes RS232 levels (such as +10V/-10V) and converts them
back to TTL (0/+5V). Many GPS receiver modules interface at TTL levels;
the MAX232 is there to interface such units properly to a standard async
serial port found on a typical computer.

The 1PPS signal needs to be converted to an RS232-compatible level (and
stretched if necessary to a suitable width) to be detected by the software
running in the PC (TAC32 or Showtime or ???) for whatever purpose the
software wants regarding this signal.

Lyle

52. Re: [TACGPS:2018] UT vs. VP Oncore.

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Mon, 18 Jan 1999 19:57:11 +0000
To: tacgps@tapr.org
Message-ID: <36A39216.EC55D6B3@clark.net>
Rendered body type: text/plain

Darryl Smith wrote:
>
> G'Day
>
> I purchased 2 Oncore's mail order, for use on APRS. Unfortunately when I
> got them they turned out to be the UT version which does not have NMEA.
> They do have a far more accurate 1pps and actually have a 100 pps
> output.

A small correction -- the UT is NOT more accurate than the VP Oncore. The
UT is basically a subset of the VP with a stripped-down command set
consisting
of the timing functions. The UT offers a few features that the VP does not,
like
the 100 PPS option, the ability to do a "zero-D" self-survey and a command
that reports the current GPS minus UTC offset explicitly.

The UT & VP both offer higher accuracy timing than the othert stripped-down
oncore, the GT, which is designed to be built into systems like
automobiles.

73, Tom

53. TAC-2 Pulse Stretcher

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Mon, 18 Jan 1999 20:30:44 +0000
To: Patrick MacKeown <pgm@ns0.help-desk.co.uk>, tacgps@tapr.org
Message-ID: <36A399F4.4501B6A2@clark.net>
Rendered body type: text/plain

Patrick -- Rick Hambly & Lyle Johnson answered the main points you asked
concerning pulse widths. The reason I included the U5 = CMOS 555 one-shot
was to solve problems like the one you seem to have. It sounds like the
receiver you are trying to interface has a pulse similar to that from
a Trimble SK-8 receiver.

The reason I specified a long 1PPS signal (100 msec with some Garmins,
200 msec from the Oncores) was to insure that the RS232 (DCD pin) 1PPS
signal would not be lost. Depending on the software being useed to fetch
the DCD 1PPS signal (either interrupt driven or polled), a 10 microsecond
pulse might easily be missed. The specific width is not too critical,
but I'd recommend that it be at least 10 msec.

On the TAC-2 schematics you will find that the width of the pulse is
about Twidth = 1.5 * R9 * C4. For R9=1meg and C4=100 nf you should get
about 150 msec.

You will have to change/install some jumpers at the 8-pin header JP4.
You will find that pins 1+3+5+7 have circuit board jumper traces, as
have pins 6+8. It appears from your description that your receiver,
like the SK-8, has a positive-going 1PPS puls, so you will have to use
the U4A inverter. Cut the PCB jumpers between 1+3 and between 6+8.
Add a jumper between 4&8 (to send an inverted version of the pulse
into U5) and between 1&2 (to sent the U5 signal into the distribution
buffers). That SHOULD do it.

In the event that your receiver's 1PPS output is open collector and
needs a pull-up to make its pulse, you can put a 10k resistor in R3
(this was the case witb the original Trimble SV-6 receivers). The
7555 triggers on the negative-going edge of its input (which is why
I had you enable the U4A inverter, assuming you have a positive-going
1PPS signal). In the event that U4A doesn't properly trigger U5, you
might want to enable the input pulse shortener by installing C3 and
cutting the PCB jumper across its pins.

Hopefully Lyle's reply explained reason that the MAX232 makes +10v
& -10v with its small internal switching power supply -- they are
needed to make the "legal" RS232 signals.

73 & good luck with this adventure -- Tom

54. RE: [TACGPS:2032] Re: UT vs. VP Oncore.

From: Mastenbrook Gary-G13216 <g13216@email1.wes.mot.com>
Date: Tue, 19 Jan 1999 07:46:34 -0600
To: "'tacgps@tapr.org'" <tacgps@tapr.org>
Message-ID: <51F347B016ADD011963200805FC145620340E381@email1.wes.mot.com>
Rendered body type: text/plain

Tom- Thanks for the frequent and helpful posts to this net! Thought I'd
respond to the "stripped-down" comment ;-) and also pass along that the
Motorola OnCore UT+ and the OnCore GT+ both have the same hardware platform
and are only different because of the different firmware loaded into them.
(I believe that the positioning algorithm is exactly the same for both
models. The UT+ has a code build which includes the precise timing functions
and deletes the NMEA functions, while the GT+ includes the NMEA
functionality and deletes the precise timing functions--but retains a
"basic" 1pps output pulse.)

Both the UT+ and the GT+ have new (and tighter) filtering on the RF section
which helps in the typical timing application as well as the very messy
automotive environment. I'm told that the filtering is better than that on
the VP.

I use the UT+ for my TAC-type timing applications and the GT+ for my APRS
applications.

I hope that Darryl can find some GT's for his APRS application.

73's

Gary N8DMT

Gary Mastenbrook, Technology Manager, Motorola Telematics
50 E. Commerce Drive, Schaumburg, IL 60173
Email: g13216@email.mot.com
Work Home Page: http://www.mot.com
Personal Home Page: http://www.qsl.net/n8dmt

-----Original Message-----
From: Dr Thomas A Clark (W3IWI) [mailto:tac@clark.net]
Sent: Monday, January 18, 1999 2:02 PM
To: tacgps@tapr.org
Subject: [TACGPS:2032] Re: UT vs. VP Oncore.

Darryl Smith wrote:
>
> G'Day
>
> I purchased 2 Oncore's mail order, for use on APRS. Unfortunately when I
> got them they turned out to be the UT version which does not have NMEA.
> They do have a far more accurate 1pps and actually have a 100 pps
> output.

A small correction -- the UT is NOT more accurate than the VP Oncore. The
UT is basically a subset of the VP with a stripped-down command set
consisting
of the timing functions. The UT offers a few features that the VP does not,
like
the 100 PPS option, the ability to do a "zero-D" self-survey and a command
that reports the current GPS minus UTC offset explicitly.

The UT & VP both offer higher accuracy timing than the othert stripped-down
oncore, the GT, which is designed to be built into systems like
automobiles.

73, Tom

55. Re: UT vs. VP Oncore.

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Tue, 19 Jan 1999 13:31:00 -0500
To: tacgps@tapr.org
Message-ID: <36A4CF64.63B1EE76@tomcat.gsfc.nasa.gov>
Rendered body type: text/plain

Gary Mastenbrook wrote:
>
> Tom- Thanks for the frequent and helpful posts to this net! Thought I'd
> respond to the "stripped-down" comment ;-) and also pass along that the
> Motorola OnCore UT+ and the OnCore GT+ both have the same hardware platform
> and are only different because of the different firmware loaded into them.
> (I believe that the positioning algorithm is exactly the same for both
> models. The UT+ has a code build which includes the precise timing functions
> and deletes the NMEA functions, while the GT+ includes the NMEA
> functionality and deletes the precise timing functions--but retains a
> "basic" 1pps output pulse.)

My comment was directed mainly to the VP vs. UT+ differences. The VP is
a different hardware engine, differing mainly in having more ROM/RAM
onboard.

> Both the UT+ and the GT+ have new (and tighter) filtering on the RF section
> which helps in the typical timing application as well as the very messy
> automotive environment. I'm told that the filtering is better than that on
> the VP.

I believe the UT+'s "improved filtering" was dictated by the fact that UT+
was really intended for use at cellular telephone sites, where heavy RFI
can be a serious problem. Some of the RFI filtering enhancements have, I
understand, been included in the newest batch of VPs (those with 10.0
firmware, produced in the past year. Some details of the VP/UT+/GT+
differences can be seen in http://www.synergy-gps.com/TN-490.pdf
Also, Rick's (WB2TNL) latest TAC32 software automatically recognizes
and supports both VP & UT+ (and I don't know about the GT+).

I don't know much about the GT+ (or its new sub-miniature clone), having
never tried them. I can comment that I have never had any RFI problems
with the VP (or even its earlier predecessor, the PVT-6=ONCORE BASIC)
even with HF/2M/70cm/23cm radios running nearby.

One other item to note -- the VP is the only model that can supply
DGPS corrections in Mot's proprietary format. Of course, it is this
message that is converted into RTCM SC-104 Type-1 DGPS messages in
Steve's (N7HPR) TAPR DGPS widget.

Personally, because it has the maximum flexibility and because it has
been a faithful "old friend", I use the VP in all my activities.

73, Tom

56. Interesting widget

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Wed, 20 Jan 1999 04:33:21 +0000
To: TACGPS <tacgps@tapr.org>
Message-ID: <36A55C91.460B8386@clark.net>
Rendered body type: text/plain

Purely by chance (actually steered by a Nuts 'n Volts classified ad)
I just stumbled on an interesting widget -- an integrated GPS/Inmarsat-C
"pod"containing a 20 watt L-band PA + Inmarsat antenna + Inmarsat receive
LNA + GPS antenna & LNA. Cost is $67 with shipping. Check out this URL:
             http://afstar.com/pod.html

If anybody has any knowledge about this toy over and above what's on the
web page, let us know (like -- will the L-band PA operate at 1296 MHz)?

73, Tom

57. Book Recommendation?

From: W4OQM@aol.com
Date: Sun, 24 Jan 1999 15:18:51 EST
To: tacgps@tapr.org
Message-ID: <6d03db22.36ab802b@aol.com>
Rendered body type: text/plain

I've been looking for a good _reference_ book on GPS. The books I've seen in
the large chain bookstores don't have the technical detail I want. The Artech
House catalog lists the following book:

Understanding GPS: Principles and Applications
Elliott Kaplan, Editor, MITRE Corporation,
554 pp., 1996,
ISBN: 0-89006-793-7

Has anyone on the list seen this book? Is it worth $105?

Thanks,
Charlie -- W4OQM

c.wells@ieee.org

58. Re: [TACGPS:2037] Book Recommendation?

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 24 Jan 1999 15:55:22 -0500

To: tacgps@tapr.org
Message-ID: <3.0.6.32.19990124155522.0094dab0@pop.gate.net>
Rendered body type: text/plain

At 02:21 PM 1/24/99 -0600, you wrote:
>I've been looking for a good _reference_ book on GPS. The books I've seen in
>the large chain bookstores don't have the technical detail I want. The Artech
>House catalog lists the following book:
>
>Understanding GPS: Principles and Applications
>Elliott Kaplan, Editor, MITRE Corporation,
>554 pp., 1996,
>ISBN: 0-89006-793-7
>
>Has anyone on the list seen this book? Is it worth $105?

Charlie, I am not familar with this book. But I thought I'd pass along
this suggestion...

Take a look at the books sold by Navtech (http://www.navtechgps.com/).
You'll also notice that Navtech has GPS seminars. Take a look at these
seminars and notice the curriculum and the references used in the seminar.
Between reading about the curriculum and references, I think you'll find
the book you are looking for.

I've purchased books from Navtech such as the Red Books, which I can
recommend. But there are very technical.

Standard disclaimers apply. I am only a satisfied customer that doesn't
have enough money to buy all the things I want from Navtech :-).

 - Steve
 (n7hpr@tapr.org)
 (n7hpr@amsat.org)

59. Re: [TACGPS:2037] Book Recommendation?

From: John Franke <j.m.franke@larc.nasa.gov>
Date: Sun, 24 Jan 1999 16:41:30 -0500
To: tacgps@tapr.org
Cc: c.wells@ieee.org
Message-ID: <v03130303b2d141d757cc@[128.155.59.12]>
Rendered body type: text/plain

>I've been looking for a good _reference_ book on GPS. The books I've seen in
>the large chain bookstores don't have the technical detail I want. The Artech
>House catalog lists the following book:
>
>Understanding GPS: Principles and Applications
>Elliott Kaplan, Editor, MITRE Corporation,
>554 pp., 1996,
>ISBN: 0-89006-793-7
>
>Has anyone on the list seen this book? Is it worth $105?
>
>Thanks,
>Charlie -- W4OQM
>
>c.wells@ieee.org

I have that book, it is very technical, but in my opinion worth the cost.

Other recognized references are:

The Red Books (Institute of Navigation), five volumes:
http://www.ion.org/redbookstoc.html
5 Volume Set (5 lb.): $120, volumes are available separately.

The Blue books:
Global Positioning System: Theory and Applications, edited by Bradford W.
Parkinson and James J. Spilker.
http://www.navtechgps.com/supply/books.asp?Line=basic
2 volume set $180, volumes are available separately.

Hope this helps,

John

John M. Franke
Senior Technologist
NASA Langley Research Center
Technology Applications Group
3 Langley Blvd, MS200
Hampton, VA 23681-2199

Voice: 757 864 4623
Fax: 757 864 8314
E-mail: j.m.franke@larc.nasa.gov

60. Re: [TACGPS:2037] Book Recommendation?

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 24 Jan 1999 17:55:04 -0600
To: <tacgps@tapr.org>
Message-ID: <000401be47f4$f6e2bec0$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

I doubt it. That is a library type book, and the price is
double in that business. I'd write the author and have him
sell you one direct, or have your library buy it. They can probably
get one on loan as well.

The $105 price means he expects to sell about 100 of them, and
is probably academic in nature. I have a bunch of old Artech House
books on radar, and they are basically crap, except for one. Luckily
I got them for free when Westinghouse went out of business.

-----Original Message-----
From: W4OQM@aol.com <W4OQM@aol.com>
To: tacgps@tapr.org <tacgps@tapr.org>
Date: Sunday, January 24, 1999 2:41 PM
Subject: [TACGPS:2037] Book Recommendation?

>I've been looking for a good _reference_ book on GPS. The books I've seen
in
>the large chain bookstores don't have the technical detail I want. The
Artech
>House catalog lists the following book:
>
>Understanding GPS: Principles and Applications
>Elliott Kaplan, Editor, MITRE Corporation,
>554 pp., 1996,
>ISBN: 0-89006-793-7
>
>Has anyone on the list seen this book? Is it worth $105?

61. Re: [TACGPS:2037] Book Recommendation?

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 24 Jan 1999 19:25:02 -0500
To: tacgps@tapr.org
Message-ID: <3.0.6.32.19990124192502.009bdb70@pop.gate.net>
Rendered body type: text/plain

At 02:21 PM 1/24/99 -0600, you wrote:
>I've been looking for a good _reference_ book on GPS. The books I've seen in
>the large chain bookstores don't have the technical detail I want. The Artech
>House catalog lists the following book:
>
>Understanding GPS: Principles and Applications
>Elliott Kaplan, Editor, MITRE Corporation,
>554 pp., 1996,
>ISBN: 0-89006-793-7
>
>Has anyone on the list seen this book? Is it worth $105?

Bookpool (http://www.bookpool.com) has it for $84.00. However, they list
it as out of stock.

Computer Literacy (http://www.computerliteracy.com) has it for $105.00 and
it's in stock.

 - Steve
 (n7hpr@tapr.org)
 (n7hpr@amsat.org)

62. Re: [TACGPS:2040] Re: Book Recommendation?

From: W4OQM@aol.com
Date: Sun, 24 Jan 1999 20:08:37 EST
To: tacgps@tapr.org
Message-ID: <71502dbb.36abc415@aol.com>
Rendered body type: text/plain

I don't have a problem with academic but I do have a problem with crummy books. I've had my company buy a few Artech House books in the past and my opinions of those books have been mixed. I have to pay for this one myself, which is why I asked.

Thanks to everyone for the input.

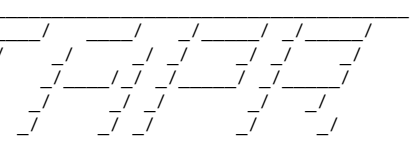
Charlie -- W4OQM
c.wells@ieee.org

---

63. TAC-2 and Technical GPS Discussions Welcome Message

From: Lyris <lyris@lists.tapr.org>
Date: Mon, 25 Jan 1999 01:54:54 -0600
To: lyris.tacgps@tapr.org
Message-ID: <LYR6754-482-1999.01.25-01.54.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

****
* PLEASE SAVE THIS WELCOME MESSAGE! *
****



Welcome to the TAPR tacgps Mail List

The purpose of the tacgps list is to provide a forum for folks interested in discussing TAC-2 and GPS related technical issues.

The tacgps list has a few simple rules:

1) Stick to the subject (tacgps). That means no virus alerts, no chocolate
chip cookie recipes, no surplus gear fire sales, no nothing that isn't directly related to tacgps.

2) No abusive behavior demonstrated towards a list member will be tolerated on the tacgps. Please take your flames elsewhere.

3) I reserve the right to unsubscribe any list member who violates these rules without warning. That means one strike and you're out of here.

To post messages to the tacgps list, send email to:

tacgps@lists.tapr.org

To unsubscribe from this mailing list, surf to:

http://www.tapr.org/cgi-bin/lyris.pl?enter=tacgps

or send email to:

lyris@lists.tapr.org

with the following line in the body of the message:

unsub tacgps

The host of this list is:

Tucson Amateur Packet Radio (TAPR)

tapr@tapr.org
http://www.tapr.org
8987-309 E Tanque Verde Rd. #337, Tucson, AZ 85749-9399,
phone 940-383-0000, fax 940-566-2544

Just so that you have all the commands neatly contained in one place,
here is just about everything you will need to know. Note that this list
is running on a Lyris server. Please be aware that the commands might be
different from those that you are used to using on other list servers.
(For more information on Lyris, see <http://www.lyris.com/>.)

1. First of all, almost everything that you might need to do on the
   server is most easily and effectively performed via Lyris's Web
   interface at <http://www.tapr.org/cgi-bin/lyris.pl>.

2. In case you do not have Web access, here are some key commands; in all
   cases, the default server address is: <lyris@lists.tapr.org>. Other
   addresses are shown where appropriate. Note that commands may be placed
   in either the subject line or in the body of the message:

```
               SUBSCRIBING:
                 subscribe tacgps your_name
                 join tacgps your_name
                 alternate address: join-tacgps@lists.tapr.org

               UNSUBSCRIBING:
                 unsubscribe tacgps
                 leave tacgps
                 alternate address: leave-tacgps@lists.tapr.org

               SETTING MEMBERSHIP TO DIGEST MODE:
                 set tacgps digest

               SETTING MEMBERSHIP TO INDEX MODE:
                 set tacgps index

               SETTING MEMBERSHIP TO DISCUSSION MODE:
                 set tacgps mail

               TEMPORARILY SUSPENDING MAIL FROM THE LIST:
                 set tacgps nomail

               RESUMING MAIL FROM THE LIST:
         (command depends on your preferred mode)
                 set tacgps mail
                 set tacgps digest
                 set tacgps index

               ACKNOWLEDGMENT:
                 set tacgps ack
                   (sends you a confirmation message when your posts are sent)
                 set tacgps noack
                   (no confirmation message when posts are distributed)

               RECEIVING COPIES OF YOUR OWN POSTS:
                 set tacgps repro
                   (receive copies of your own posts)
                 set tacgps norepro
                   (do not receive copies of your own posts)

               SETTING YOUR PASSWORD:
                 set tacgps pw=mypassword
                   (where "mypassword" is the password you wish to set)

               DETERMINING YOUR MEMBERSHIP SETTINGS:
                 query tacgps

               RETRIEVING THE CURRENT VERSION OF THIS DOCUMENT:
                 get tacgps hello

               MORE INFORMATION ON LYRIS'S COMMANDS:
                 help
```

POSTING TO THE LIST:
  You must be a subscriber to post messages. Sending
  mail to this address will distribute it to all the members of the
  mailing list: tacgps@lists.tapr.org

3. CHANGING YOUR SETTINGS/ADDRESS VIA THE WEB INTERFACE: To do this, go
   to <http://www.tapr.org/cgi-bin/lyris.pl> and click the link in the
   "Change Your Settings" section. You'll need to enter your e-mail
   address and password (if you chose one) to continue.

   (If you've forgotten your password, you can type in your e-mail address
    in the field at the bottom of the page and click "Get password" to
    request Lyris to e-mail your password to you.)

   At the following page, you can read messages, post a message, adjust
   your settings, or unsubscribe. From the settings page, you can change
   your status (MAIL, DIGEST, INDEX, or NOMAIL), choose whether or not to
   see your own messages, and choose whether or not you want to receive a
   separate acknowledgement via e-mail when one of your messages is posted
   to the list, You can also change your e-mail address if you need to.
   When you change your settings, make sure you click the "Save" button at
   the bottom of the page.

4. ARCHIVES: The tacgps SIG archives are available on the Web, at the
   following URL: <http://www.tapr.org/sigf.html>

5. BOUNCED MAIL: One of the key features of Lyris is its ability to handle
   mail bounces transparently to the list owner; as such, bounced mail
   will be handled primarily by the Lyris list server.

6. POSTS/REPLIES FROM DIGEST USERS: You *must* change the Subject: line
   when replying to a digest; all posts with "tacgps DIGEST" in the
   Subject: line will be rejected by the server (you will receive a
   "rejection letter" when this happens).

64. [tacgps] TAPR Server Upgrade

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 25 Jan 1999 05:05:39 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-529-1999.01.25-05.06.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello TAPR Archiver, you might be interested to know that TAPR
has upgraded our list processor to a new lyris based system.

This message is going to you on the tacgps list.

You are listed as: lyris.tacgps@tapr.org on the list

This new package has a lot of features which might cause a few glitches as
we make the transition. Read the following to find out more.

ACCESSING THE SYSTEM VIA THE WEB

When the new TAPR web pages go on-line in the next few weeks, they will
contain the new interface to the lists as well as a new and improved search
engine for the various mail archives.

To directly access the TAPR.ORG Lyris server for now, use
http://www.tapr.org/cgi-bin/lyris.pl

GETTING ON-LINE HELP
----
visit: http://www.tapr.org/lyris/help/index.html for a full on-line manual

MEMBERS ONLY POST

With the recent increase in spamming some of the TAPR lists implement the rule "only members of the list can post to said list". If the incoming e-mail address doesn't match your e-mail subscription stored in the list, lists.tapr.org will reject your message.

If you get a rejected message from the list server, then you will need to change your address in the list. We have already seen a few rejected posts in the log. We apologize for those caught in the change over. Do the following and repost your message.

To change your member e-mail address on this list, do the following:

1. go to http://www.tapr.org/cgi-bin/lyris.pl?enter=tacgps
2. For "Did you forget your password?" enter lyris.tacgps@tapr.org
3. lists.tapr.org will e-mail you your password for the list.

After you get your password use "If you are member..."
4. enter lyris.tacgps@tapr.org for email address
5. enter YOUR_PASSWORD (the one you just got e-mailed)
6. click on the enter button

At this point you can edit any of your information for this list.
You can also send and receive messages from this screen if you are away from e-mail at the time. We plan on keeping e-mail for 30 days on the Lyris interface, after which time messages can be found in the html searchable archives.

To get more information on your options see:
http://www.tapr.org/lyris/help/ChangeMembershipSettings.html

LOTS OF INFORMATION IN EACH MESSAGE

No member of a list should now have an excuse for not knowing how to unsubscribe from the list. Each message contains information on how to subscribe as well as unsubscribe. To unsubscribe, just send to the unique address shown in your message.

HOLD ON BOUNCED E-MAIL

When people's email addresses go bad (for instance, they change to another Internet Service Provider) each email message sent to their old address bounces back to lists.tapr.org. In the past, this was a huge management issue for myself and a few other on the tapr list server. Lyris will now analyze the bounces and determine who is causing them. If a member's email address appears to be invalid for 5 days in a row, Lyris automatically disables that participant's membership on the system, so that lists.tapr.org no longer sends them mail.

When a user is placed on hold, we will send the user an email message indicating that this has occurred, as well as a copy of the most recent error message received. This notification message, if the user receives it, can be very helpful to the user in determining why their email was being rejected by their mail system.

In such a case, send the "unhold" command to the List Server address, and Lyris will return any "held" subscriptions back to "normal." The format of the unhold command is:

email to: lyris@lists.tapr.org
subject: unhold

500K Message Limit on most open lists

We have implemented a 500K message size limit on the open lists. This should catch most of the huge posts that get made. If this limit needs to be changed, the list manager can change the setting for that list.

MESSAGE FILTER

Lyris looks for a lot of things in the message that might indicate something not meant to be sent to the list. Like the word TEST or UNSUBSCRIBE in the Subject line. If you send a message to the list server

that it thinks is a 'suspect' message and it isn't, just change the word or line and please resubmit.

While this might cause a problem now and then for the average user, it saves a lot of posting of messages that shouldn't be making it to the list.

CONCLUSION

Moving to a new list package has been on our upgrade to do list for some time. Thanks to member support, TAPR has been able to make this upgrade a reality. We feel that this new package will greatly help expand our capabilities while also reducing the amount of work that it took to keep the previous list package running correctly.

I am in the midst of developing a new web site along with several other new items that should make using and getting information from the TAPR.ORG site much easier.

If you have any questions or comments, please feel free to drop me an e-mail message.

To those members of TAPR on this list, please give yourself a big pat on the back of supporting TAPR! For those of you that haven't joined TAPR yet, consider this a friendly reminder that you should think about joining in order to support future maintenance of things we do on the Internet and the various technical projects that are always ongoing. TAPR is only as strong as its membership.

Cheers -- Greg Jones, WD5IVD
President, TAPR

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

65. [tacgps] Interesting Widget

From: Dan_Hinz@amat.com
Date: Mon, 25 Jan 1999 08:03:39 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-645-1999.01.25-10.09.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I wrote an e-mail requesting additional information on these.
Unfortunately, they have no schematics
for them.
dan, W6LSN
---------- Forwarded by Dan Hinz/APPLIED MATERIALS on 01/25/99
08:04 AM ----------

"JOE NOVAK" <BEACON@prodigy.net> on 01/23/99 05:11:46 AM

Please respond to "JOE NOVAK" <BEACON@prodigy.net>

To: Dan Hinz/APPLIED MATERIALS
cc:
Subject: Re: POD antennas @http://afstar.com/pod.html

Thanks for your inquiry, Dan.

We received the pods in a trade. They were originally sold to the trucking industry by the
American Mobile Satellite Corp (AMSC) for communications via Inmarsat.
When
AMSC
switched to their own satellite, the trucking systems became incompatible.
This was a big

surprised to AMSC who had to repurchase all the radios. The pods still
work
just find on
Inmarsat. We have a Inmarsat Standard C system here and can easily log onto
the system using the pods as antennas.

We do not have schematics for the PODS.   If you wish to use the power amps
on 1200MHZ or
900MHZ you will have to by-pass the strip line filters now on 1620 - 1650
MHZ. Not a big
operation.   The receive filters are 1520 - 1580 MHZ.

Drive power is 0 dbm.

Connectors- Five pin control connectors - we still have a few around here
and
the RF connector is a Type N. 24 volts DC goes up the coax.

Hope this helps, Joe Novak

-----Original Message-----
From: Dan_Hinz@amat.com <Dan_Hinz@amat.com>
To: beacon@prodigy.net <beacon@prodigy.net>
Date: Friday, January 22, 1999 10:13 AM
Subject: POD antennas @http://afstar.com/pod.html

>
>To whom it may concern:
>
>I recently came across your L-band pod at the above listed URL.
>Do you have any more information about them? Some question off the top of
>my head:
>
>What drive level is required to achieve 20 watts out
>What is the power output at 1296MHz, 900MHz?
>   - If unavailable, is a schematic available?
>Size of the pod? (w & w/o radome)
>What type of connectors for RF/DC?
>power/isolation/frequency response of the diplexers?
>
>Thanks,
>Dan, W6LSN
>
>dan.hinz@ieee.org
>dan_hinz@amat.com
>
>
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

66. [tacgps] Re: [TACGPS:2036] Interesting widget

From: "Doug McKinney" <buoy@redshift.com>
Date: Mon, 25 Jan 1999 08:03:30 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-653-1999.01.25-10.16.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Dr Thomas A Clark (W3IWI) <tac@clark.net>
To: tacgps@tapr.org <tacgps@tapr.org>
Date: Tuesday, January 19, 1999 8:41 PM
Subject: [TACGPS:2036] Interesting widget

>Purely by chance (actually steered by a Nuts 'n Volts classified ad)
>I just stumbled on an interesting widget -- an integrated GPS/Inmarsat-C

>"pod"containing a 20 watt L-band PA + Inmarsat antenna + Inmarsat receive
>LNA + GPS antenna & LNA. Cost is $67 with shipping. Check out this URL:
>   http://afstar.com/pod.html
>
>If anybody has any knowledge about this toy over and above what's on the
>web page, let us know (like -- will the L-band PA operate at 1296 MHz)?
>
>73, Tom
>
Well, I couldn't resist and ordered 4. So I'll pass along what I find out!
73's
Doug

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

67. [tacgps] White House Announcement

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Tue, 26 Jan 1999 17:54:05 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-1333-1999.01.26-16.54.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At long last, the official announcement on the policy for
civilian (i.e. C/A Code) access to L2 and the plans for the
new L3 frequency has been made yesterday -- Tom

                          THE WHITE HOUSE

                      Office of the Vice President

For Immediate Release   Contact:
Monday, January 25, 1999   (202) 456-7035

                      VICE PRESIDENT GORE ANNOUNCES
          NEW GLOBAL POSITIONING SYSTEM MODERNIZATION INITIATIVE

Initiative Would Make Global Positioning System More Accessible to Civilian
                                  Users

     Washington, DC -- Vice President Gore announced today a $400 million
new initiative in the President's balanced budget that will modernize the
Global Positioning System (GPS) and will add two new civil signals to
future GPS satellites, significantly enhancing the service provided to
civil, commercial, and scientific users worldwide.

     "The United States is proud to be a leader in the development of the
Global Positioning System -- a wonderful example of how technology is
benefiting our citizens and people around the world," Vice President Gore
said. "This initiative represents a major milestone in the evolution of GPS
as a global information utility, and will help us realize the full benefits
of this technology in the next millennium."

     This initiative is only the most recent step in an ongoing
public-private effort to make GPS more responsive to the needs of civilian
users worldwide. National and regional GPS-based networks are now being
created by governments and industry around the world to help guide
everything from planes, trains, ships, and cars to tractors, snowplows,
earthmovers, and mining equipment.

     As announced by Vice President Gore last March, the second civil
signal will be located at 1227.60 MHZ along with the current military
signal, and will be available for general use in non-safety-critical
applications.   The President's Budget supports implementing this new
signal on the satellites scheduled for launch beginning in 2003.

     Key to the overall modernization initiative was a recent White House
decision on the frequency for a third civil signal that can meet the needs
of critical safety-of-life applications such as civil aviation. The third
civil signal will be located at 1176.45 MHZ, within a portion of the
spectrum that is allocated internationally for aeronautical radio
navigation services, and will be implemented beginning with a satellite
scheduled for launch in 2005. This initiative will cost $400 million over
six years. The date that new services will be available to users will
depend on the actual launch dates, orbiting sufficient numbers of

satellites to provide useful services, and maintaining operational
capabilities.

     When combined with the current civil signal at 1575.42 MHZ, the new
signals will significantly improve the robustness and reliability of GPS
for civil users, and will enable unprecedented real-time determination of
highly accurate position location anywhere on Earth. This new capability
will spur new applications for GPS, further expanding the rapidly growing
market for GPS equipment and services worldwide.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

68. [tacgps] White House announcement

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Tue, 26 Jan 1999 18:11:00 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-1337-1999.01.26-17.11.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The material I just posted is also available on the web at

    http://www.ngs.noaa.gov/FGCS/GIAC/giac.html

This site also has a PDF version of the Jan.15 definitive
memo on White House stationery. Click on the first two items
on the FGCS/GIAC web page.

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

69. [tacgps] Motorola ONCORE VP - Antenna

From: "Jon" <jandrews@i-2000.com>
Date: Wed, 27 Jan 1999 23:37:59 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-1767-1999.01.27-22.39.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello!

I have a problem.. I bought an Oncore VP a little over 2 years ago with the
I/O & P/S board, a TAC2, and a MIC-E... I chose to keep the GPS outboard so
that I
can share it among the different boxes. I just now am getting around
getting the GPS up and running, the TAC2 is 90% complete and mic-e is
finished and tested.

I have a Garmin GPS-45 with an active external antenna GA-26. Reading the
specs
(and metering the 5VDC at the antenna connectors) it seems that the Garmin
antenna
should work. There is very little Technical data available for the Garmin
stuff and
none for the antenna that I can find.

It may work... however, when I power up the Oncore and communicate with
it...
 with the Garmin antenna installed... the self test comes back fine.
However,
there is no satellite data received even after an hour our so...

Will this antenna work?
Can it be made to work?
What is the best solution that is reasonably priced?

Do any of you have any ideas and/or solutions to my problem?

73 de Jon
K1IMD
NNNN

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

70. [tacgps] GPS performance

From: Dan Hinz <dan.hinz@ieee.org>
Date: Thu, 28 Jan 1999 22:03:13 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-1936-1999.01.29-00.06.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Problem: GPS position varies tremendously for a fixed location. I thought that my position would only fluctuate a couple of hundred meters max, and typically be within 100 meters. Could I have a bad GPS unit? (it is telling TAC32 it is ok)

I have attached a sample of data taken a couple of days ago. I believe the first and last pieces of data are "good." This wander happens every two to three days.

I am using a Garmin GPS-25 to run Tac32 through a TAC-2 interface. I am logging data from the Garmin every 60 seconds. I have what I feel to be a good reference position in the program.
I have the program in precision timing mode, which in the case of the Garmin puts it in a 2-D mode, it locks the altitude.

990128:

UTC	LAT	Long	SAT	hdop	alt
1517	37.233075	N 121.893193333333 W	7	1.2	84.2
1518	37.3513233333333	N 121.906961666667 W	8	1.2	84.2
1519	37.45789	N 121.920088333333 W	8	1.2	84.0
1520	37.2331016666667	N 121.893251666667 W	8	1.2	83.8
1521	37.5850133333333	N 121.937515 W	8	1.0	83.6
1522	37.7553283333333	N 121.960875 W	8	1.1	84.2
1523	37.8648483333333	N 121.977331666667 W	8	1.0	83.3
1524	37.871095	N 121.964225 W	8	1.0	83.1
1525	37.2332416666667	N 121.89341 W	7	1.1	84.2

Thanks for any ideas
73,
Dan
W6LSN

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

71. [tacgps] Sv: GPS performance

From: "Kurt Poulsen" <lhmobil@post4.tele.dk>
Date: Sat, 30 Jan 1999 03:57:50 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2274-1999.01.29-20.04.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Dan and others in the group

It is quite natural that your position does wander, and the Garmin 25 are "special terrible" in this respect, at least the units I have bought two years ago.
The GPS signal wanders within the limit 1/1000 of a minute 95% of the day, and with a speed not higher than 0,5m/s. In the residual 5% of the day the offset from correct position can be as much as 600 meters in any direction.
I have attached a jpeg file compressed 100 times, (more compression - and it is unreadable) which are plots made with Garmin 12XL, and Garmin 25 are pretty identical in this respect.
Two of the pictures are continous differential compensated with a high quality Leica DGPS source, and even then the position wanders considerable (15 meter), and the third picture are without DGPS correction, where it the track lenght is 49km "around my house" within 3 hours. !!!
Simular the Globenav/Eagle GPS receiver has only a 500 m track in 8hours under the same condition, and the DGPS corrected position stays within the 1/1000 of a minute limit (1.7m north-south and 1 meter east-west at my position) This GPS receiver uses a Rockwell 12 channel chip.
I did contact the manufacturer (GARMIN), which just claimed that the error was of same magnitude as the position accuracy obtained using marine DGPS beacon receivers, and thus "blurred".
I have recently tested the Garmin 12XL and now the DGPS error using the Leica Source are within 3-5

meters
, so the manufacturer has fixed the major bug. But the Lowrance Products are still much better, which wanders only 0.3 meter when HDOP are low (1-1,5).

I apologize attaching the JPEG file, to those not so interested in this topic, but I wanted to share my long lasting experiance with DGPS.
I can send those intested, the same datasheet for the Lowrance products as direct e-mail, as an attachment.
General info:
The state of the art here in Denmark is, that we provide a public DGPS source, which is transmitted via 9600bps GSM data and thus obtain an absolute accuracy within 1 meter within at least a range of 600km from the reference source (degredation 20ppm per 100km or 0,2 meter per 100km)
We can use the danish reference e.g. in france, just checking the relevant Lowrance receivers page telling, that all visible sat's are dgps corrected. I have tried it in belgium myself.
The trick is that the delay in GSM is only 0,3sec and the DGPS age thus 0 sec, meaning almost realtime DGPS correction. The only expences for a fix in the lanscape are the air time expences (15 cent per minute) and a fix (waypoint) takes less than a minute. We will shortly upgrade the system so the time from dialing to DGPS data received are 8 seconds (ISDN-V110 access)
My home page www.lhmobil.dk provide some limited information, (an only shows the very simple system we provide) but will soon be a "rich source"of DGPS facts and will show the three other types of intefaces I have developed whre some are with the datatranceiver build into the box, as opposed using a pocket phone.
I have provided DGPS-GSM interfaces for several years now and the professional sector now believes in the accuracy. There has been a great deal of doubts until now.

Kind regards

Kurt Poulsen
-----Oprindelig meddelelse-----
Fra: Dan Hinz <dan.hinz@ieee.org>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Dato: fredag, januar 29, 1999 07:06
Emne: [tacgps] GPS performance

>Problem: GPS position varies tremendously for a fixed location. I
>thought that my position would only fluctuate a couple of hundred meters
>max, and typically be within 100 meters.   Could I have a bad GPS unit?
>(it is telling TAC32 it is ok)
>
>I have attached a sample of data taken a couple of days ago. I believe
>the first and last pieces of data are "good." This wander happens every
>two to three days.
>
>I am using a Garmin GPS-25 to run Tac32 through a TAC-2 interface. I am
>logging data from the Garmin every 60 seconds. I have what I feel to be
>a good reference position in the program.
>I have the program in precision timing mode, which in the case of the
>Garmin puts it in a 2-D mode, it locks the altitude.
>
>
>990128:
>UTC   LAT
>Long   SAT hdop   alt
>1517 37.233075   N 121.893193333333 W   7
>1.2   84.2
>1518 37.3513233333333   N 121.906961666667 W   8   1.2   84.2
>1519 37.45789   N 121.920088333333 W   8
>1.2   84.0
>1520 37.2331016666667   N 121.893251666667 W   8   1.2   83.8
>1521 37.5850133333333   N 121.937515   W   8   1.0
>83.6
>1522 37.7553283333333   N 121.960875   W   8   1.1
>84.2
>1523 37.8648483333333   N 121.977331666667 W   8   1.0   83.3
>1524 37.871095   N 121.964225   W   8
>1.0   83.1
>1525 37.2332416666667   N 121.89341   W   7
>1.1   84.2
>
>Thanks for any ideas
>73,
>Dan
>W6LSN
>
>
>---
>You are currently subscribed to tacgps as: LHMOBIL@POST4.TELE.DK
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

>
[Attachment: gar12gpe.jpg; image/jpeg; 31,555 bytes]

72. [tacgps] [Fwd: Sv: GPS performance]

From: Dan Hinz <dan.hinz@ieee.org>
Date: Fri, 29 Jan 1999 19:59:50 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2301-1999.01.29-22.02.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kurt -
Thanks for the information.

You indicated that I one can expect reasonable accuracy 95% of the time
and something less out to 600Meters, the other 5%. My problem is that
the position was off over 0.6 degrees which is over 36 Nautical Miles!
That seems like a hardware problem on my end, not a system problem.

Thanks again,
Dan
W6LSN
[Attachment: gar12gpe.jpg; image/jpeg; 31,555 bytes]

73. [tacgps] Re: [Fwd: Sv: GPS performance]

From: Jeff Vollin <barnie@flash.net>
Date: Fri, 29 Jan 1999 22:42:19 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2314-1999.01.29-23.43.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have logged literally weeks of position data from Garmin GPS40, GPS12XL,
and a Motorola Oncore. I never saw position error data greater than about 500 m max. The
data for all the units in the non-differential mode was nearly the same at ~50m at the
2-sigma (95%) level. The data is VERY close to gaussian-distributed so an error of 500m
would be like 20 sigma, i.e., this occurs very rarely.
  Having said all that I did see a couple times where the Garmin 40 "headed for the hills".
When the error got to something like 1km, the unit tossed up the error message "Please
re-init" and then seemed hung. Powering down and restarting brought things back to normal.
I would guess that situation occurs maybe once a month of continuous use, max. I never
saw this behavior from either the 12XL or the Oncore.
I would say you definitely have a bad unit.

Jeff Vollin

Dan Hinz wrote:

> Kurt -
> Thanks for the information.
>
> You indicated that I one can expect reasonable accuracy 95% of the time
> and something less out to 600Meters, the other 5%. My problem is that
> the position was off over 0.6 degrees which is over 36 Nautical Miles!
> That seems like a hardware problem on my end, not a system problem.
>
> Thanks again,
> Dan
> W6LSN
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

74. [tacgps] DGPs and post correction.

From: "Don Robinson" <don.robinson@clear.net.nz>
Date: Sat, 30 Jan 1999 19:39:27 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2333-1999.01.30-00.40.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have built up a TAPR RTCM unit from the kit and am pleased with the performance. Thanks TAPR.

I am however interested in using another ONCORE (or similar) receiver and doing post corrections rather
than real time. I am aware of Sams pages on the www but I would be interested in any experience or
assistance anyone in the group can give - or even just some pointers to information. I guess the
ultimate would be a program that takes info from both the base and rover receiver and processes the info

to give corrected positions. I am not looking for high accuracy (5 - 10 m) would be useable but more would be a bonus.

I notice in summer 98 Packet Status Register the Dr Thomas Clark makes mention that there is some work in progress in this area. Does anyone have any news of this? Is there any help that I could maybe give to the group in this area.

Any advice, help or pointers gladly received.

Don Robinson ZL2QX

75. [tacgps] Sv: [Fwd: Sv: GPS performance]

From: "Kurt Poulsen" <lhmobil@post4.tele.dk>
Date: Sat, 30 Jan 1999 13:46:16 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2356-1999.01.30-05.52.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello again Dan

That was quit some deviation, I have aparently not understood Your input.
Hasve You encountered the difference between magnetic and true bearing, because 0.6 degree looks like that sort of deviation.

Regards
OZ7OU Kurt
-----Oprindelig meddelelse-----
Fra: Dan Hinz <dan.hinz@ieee.org>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Dato: lørdag, januar 30, 1999 05:02
Emne: [tacgps] [Fwd: Sv: GPS performance]

>Kurt -
>Thanks for the information.
>
>You indicated that I one can expect reasonable accuracy 95% of the time
>and something less out to 600Meters, the other 5%. My problem is that
>the position was off over 0.6 degrees which is over 36 Nautical Miles!
>That seems like a hardware problem on my end, not a system problem.
>
>Thanks again,
>Dan
>W6LSN
>
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

76. [tacgps] GPS errors

From: Dan Hinz <dan.hinz@ieee.org>
Date: Sat, 30 Jan 1999 09:28:54 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2415-1999.01.30-13.07.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob et al.
Thanks for all of the ideas. I believe I will call Garmin and ask about a new unit.
To answer some of the questions posed;
I don't have the signal strengths, but typically TAC32 reports them in a range of 25 to 35. I don't know how it determines those numbers as the raw data from the unit has them up in the 40's.

The unit is a parallel receiver and can track up to 12 satellites (11 if using the 1pps output).
I don't believe I have a problem with signal strength. I have almost a perfect view of the horizon. The horizon picture is nearly perfect down to the horizon. Then antenna is an amplified Garmin unit and is sitting on top of a metal chimney cap. All connections are with BNC or N and I have waterproofed all connections outside the house using coax seal.

Then number in the previous message for satellites was the number tracked, not in view.

The 0.6 degree difference I mentioned was in latitude, not in heading,
so magnetic deviation is not a consideration.

Does anyone know of a program/web site etc. that would allow one to
input date, time, location and get a picture of how the satellites would
have been arranged in the sky? My thought is that perhaps the
satellites were all in, or nearly in, "a line" that was parallel with my
latitude so that it there was very little differentiation. Personally,
I think that's a long shot just because I did have 8 satellites in view.

Thanks,
Dan
W6LSN

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

77. [tacgps] Re: GPS errors

From: Lyle Johnson <lylej@azstarnet.com>
Date: Sat, 30 Jan 1999 12:17:22 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2417-1999.01.30-13.20.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Does anyone know of a program/web site etc. that would allow one to
>input date, time, location and get a picture of how the satellites would
>have been arranged in the sky? My thought is that perhaps the
>satellites were all in, or nearly in, "a line" that was parallel with my
>latitude so that it there was very little differentiation. Personally,
>I think that's a long shot just because I did have 8 satellites in view.

Dan,

The Ashtech web site has Evaluate for free download. It provides a view of
all spacecraft in the sky and does the usual NMEA message saving and replay.

Enjoy,

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

78. [tacgps] Re: DGPs and post correction.

From: Brooks Shera <ebs@lanl.gov>
Date: Sat, 30 Jan 1999 16:40:56 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2452-1999.01.30-17.37.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I couple of months ago I became interested in postprocessing Oncore
data also (had a little surveying problem and was too cheap to pay a
professional and too lazy to build a DGPS station). Anyway I wrote
some software that takes the binary data from 2 Oncore rcvrs (recorded to
files) and does single difference post-processing. The resulting accuracy
is at the 1-2 meter level.

One receiver sits at home feeding its data to a PC, while the other
travels around in my car feeding data to a notebook computer.
A draw-back is that the data files can get large (maybe 1 Mb/hour).

The good news is that I observe very few cycle-slips in the carrier
phase as I drive around (however, I live where that aren't many trees
taller than a man's head!). The good carrier phase data means that
double-difference carrier-phase processing is possible, even tho
the Oncore lacks the L2 frequency and P-code features that the
survey-quality GPS receivers have.

Just how good a job can be done with just the L1 phase and C/A code
remains to be seen - I'm still working on it, and other folks may

already know the answer. The noise level in the Oncore carrier phase
measuring circuit is respectably low. Using one antenna, a splitter, and
two
receivers I measured 1.2 mm (!) rms phase noise by double differencing a
pair of satellites (see Sam's page). It gives me some hope that accuracy
at the few mm level might be possible if the two rcvrs aren't too far
apart (a few miles). It's mainly a problem in mathematics.

It's amusing to think of a couple of Oncores in the same league as
$50,000 Trimble geodetic setup!

Brooks

--------------Don Robinson wrote--
>I am however interested in using another ONCORE (or similar) receiver and
>doing post corrections rather than real time. I am aware of Sams pages on
>the www but I would be interested in any experience or assistance anyone
>in the group can give - or even just some pointers to information. I guess
>the ultimate would be a program that takes info from both the base and
>rover receiver and processes the info to give corrected positions. I am
>not looking for high accuracy (5 - 10 m) would be useable but more would
>be a bonus.
>
>I notice in summer 98 Packet Status Register the Dr Thomas Clark makes
>mention that there is some work in progress in this area. Does anyone have
>any news of this? Is there any help that I could maybe give to the group
>in this area.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

79. [tacgps] I got my Pods and I like 'em

From: Steve Bennett <swben@ricochet.net>
Date: Sat, 30 Jan 1999 17:07:21 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2465-1999.01.30-19.15.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi

I recived two GPS/INMARSAT antenna pods from afstar last night. After
cobbling up a DC block/power tee I hooked the pod up to my oncore with
60 feet of coax and fired showtime up. All the avalable sat's locked
with 20dB or better S/N.
 I am planning to set this thing up on my roof. The pod looks like it
should drive the cable just fine. Joe from Afstar

   http://afstar.com/pod.html

tells me these things where made to work with 24 volts sent up the coax
center conductor but 18 volts will work. A DC block between the power
tee and the reciver is required to keep the 24 volts on the coax from
connecting with the 5 volts comming out of the oncore and causing smoke
to be relesed from the oncore.
 I am a happy camper. The pods are sturdy looking and the two I got are
fairly clean and both work. I ran showtime all night and saved the
avarage position. I will move the antenna to the other side of the yard
tonight and see how close the GPS and the tape measure match up, ah geek
fun!

The usual disclaimers apply, I'm just a happy customer

Steve Bennett

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

80. [tacgps] Re: DGPs and post correction.

From: Lyle Johnson <lylej@azstarnet.com>
Date: Sat, 30 Jan 1999 20:44:08 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2486-1999.01.30-22.12.05--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Brooks!

An outfit in Canada does post-processing using Oncores and routinely gets

accuracies in the few mm range over short baselines.

If you know how to do the math, and can teach the computer to do it, too, I suspect you'll win :-)

Regards,

Lyle

>Just how good a job can be done with just the L1 phase and C/A code
>remains to be seen - I'm still working on it, and other folks may
>already know the answer. The noise level in the Oncore carrier phase
>measuring circuit is respectably low. Using one antenna, a splitter, and
>two
>receivers I measured 1.2 mm (!) rms phase noise by double differencing a
>pair of satellites (see Sam's page). It gives me some hope that accuracy
>at the few mm level might be possible if the two rcvrs aren't too far
>apart (a few miles). It's mainly a problem in mathematics.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

81. [tacgps] Re: GPS errors

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Sun, 31 Jan 1999 04:45:43 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2490-1999.01.30-22.46.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dan -- let me try to answer a few of your questions:

First -- the ~.5 degree = 30 NMi = 55 km errors you reported are
definitely anamolous.

I seem to recall from one of your messages that you were trying to
use the GPS-25 in 2D mode (altitude-fixed). My first suggestion is that
you repeat the experiment, releasing the receiver to do full 3-D fixes.
If you have not saved a correct altitude (like you are still using the
one from Rick's home that is the TAC-32 default, or if you happened to
have a ft-vs-meters conversion error of ~1 km, you could induce horizontal
position errors of tens of km in the Lat/Lon.

> I don't have the signal strengths, but typically TAC32 reports them in a
> range of 25 to 35. I don't know how it determines those numbers as the
> raw data from the unit has them up in the 40's.

There are two different sets of units reported for the S/N by different
receivers. One is related to Eb/No and reflects the S/N obtained with
the 50 Hz bandwidth needed to recover the 50 bit/sec GPS data message.
A second common set of units is C/No, refering the recovered S/N to a 1 Hz
bandwidth. Since these two ways of quoting S/N differ by a factor of
50, there is a 17 dB intrinsic difference between them. Motorola seems
to have adopted the smaller Eb/No value with typical values ~30 dB.
Garmin seems to have adopted the other definition.

When I wrote my original SHOWTIME code, I determined that the Garmin
minus Motorola difference was emirically more like 20 dB, and since
SHOWTIME was originally written for the Motorola, I decided to
subtract 20 dB so that the two receivers would produce comparable
numbers (and so that the S/N display didn't have to be re-scaled in
the software!). This decision was discussed in some length in the
SHOWTIME documentation. I believe Rick followed my lead and did the
same thing in TAC-32, but he will have to comment on whether he used
the theoretical 17 dB or empirical 20 dB value for the Garmin
normalization correction.

With the Eb/No (Motorola) definition, let me comment on what these
numbers mean. The GPS C/A "Gold" spreading code has a length of 1023 bits
(1 msec of time at 1.023 Mb/s rate). Without going into a lot of
Spread Spectrum theory, it can be shown that this length code leads to
a GPS S/N dynamic range ~24 dB as the maximum permitted difference
between the strongest an weakest satellites that can be used. If you
go thru BPSK coding theory (and add a couple of dB for "real-world"
implementation losses), you will find that your ability to recover a
BPSK signal requires an Eb/No ~8 dB for the weak-signal end. Therefore,
if the transmitters in the GPS constellation are properly sized, no
GPS satellite should be stronger than ~(8+24) = 32 dB. And that's

about the level you should see for a high-elevation satellite if things
are working well. If your antenna is poor, or if you are in a high RFI
environment, or if you have a lot of attenuation from tree leaves, you
will still be able to work when the strongest signal is in the low 20's,
but if it is weaker you will have problems.

> Does anyone know of a program/web site etc. that would allow one to
> input date, time, location and get a picture of how the satellites would
> have been arranged in the sky? My thought is that perhaps the
> satellites were all in, or nearly in, "a line" that was parallel with my
> latitude so that it there was very little differentiation. Personally,
> I think that's a long shot just because I did have 8 satellites in view.

If you are using the newest versions of TAC-32 you will find that it
includes a real-time az-el "radar plot" option so you can visualize where
the satellites are located. This feature also lets you acquire a horizon
mask sowing the lowest elevation that satellites are detected. TAC-32's
"S-meter" bars can be sorted in PRN, S/N, Az or El order by clicking the
radio button at the top of the appropriate column.

I seem to recall from your earlier posting that your logs included the
xDOP values. These numbers give you a good feeling for the "goodness"
of the geometry. In general, if HDOP < 2, you should >>NEVER<< see
horizontal errors bigger than ~200 meters (since you were logging in
fractional degrees, this would be ~0.002 degrees. The conversion is that
1 deg of Latitude = 60 NMi = 111.11 km or 1 minute = 1 NMi = ~1850 meters.
In Longitude, multiply these numbers by cos(Latitude)).

Hope this helped -- 73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

82. [tacgps] Re: DGPs and post correction.

From: "Don Robinson" <don.robinson@clear.net.nz>
Date: Sun, 31 Jan 1999 20:59:23 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2546-1999.01.31-02.01.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Brooks (and anyone else interested),

Thanks for your helpful reply. I probably need to obtain the MOTOROLA
reference manual for the ONCORE and download some of the single difference
code from Sams pages to get me started. Any idea if the Motorola manual is
available on line?

In reading through the info I do have on the ONCORE (ex TAPR with the DGPS
kit) I note the ONCORE has an output for Psuedorange corrections - when at a
known location. I wonder if I could use one receiver as a base and record
this correction - then apply it to the rover recorded Psuedoranges to give
me a corrected position. Like realtime correction mode - but delayed!! I
also note there is a Input Psuedorange correction command. Can this be used
to correct the rover? Is it only manual or can a file mode be used?
Comments welcome.

I will keep in touch and I welcome any input from you or others. Your reply
certainly has started me on some positive thinking.

Thanks

Don Robinson

-----Original Message-----
From: Brooks Shera <ebs@lanl.gov>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Sunday, January 31, 1999 12:37 PM
Subject: [tacgps] Re: DGPs and post correction.

>
>I couple of months ago I became interested in postprocessing Oncore
>data also (had a little surveying problem and was too cheap to pay a
>professional and too lazy to build a DGPS station). ....

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

83. [tacgps] Re: DGPs and post correction.

From: Luca Bertagnolio <berta@micronet.it>
Date: Sun, 31 Jan 1999 13:15:44 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2561-1999.01.31-06.17.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello list,

At 16.40 30/01/99 -0700, Brooks Shera wrote:
>
>I couple of months ago I became interested in postprocessing Oncore
>data also (had a little surveying problem and was too cheap to pay a
>professional and too lazy to build a DGPS station). Anyway I wrote
>some software that takes the binary data from 2 Oncore rcvrs (recorded to
>files) and does single difference post-processing. The resulting accuracy
>is at the 1-2 meter level.

I think I wrote an e-mail some time ago to this list asking if anyone was
doing work on this, and I am very glad to read about this now.

Please, let the list know more about this and any improvement you will do
on this topic. Also, if it's possible, I wouldn't mind testing the software.

Thanks, Luca IK2OVV
Milan, Italy

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

84. [tacgps] Re: DGPs and post correction.

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Sun, 31 Jan 1999 09:35:25 -0500 (EST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: lerman@lerman.nai.net (Kenneth Lerman)
Message-ID: <LYR6754-2579-1999.01.31-08.43.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

So, Brooks, can I get a copy of your software?

Ken

>
>
> I couple of months ago I became interested in postprocessing Oncore
> data also (had a little surveying problem and was too cheap to pay a
> professional and too lazy to build a DGPS station). Anyway I wrote
> some software that takes the binary data from 2 Oncore rcvrs (recorded to
> files) and does single difference post-processing. The resulting accuracy
> is at the 1-2 meter level.
>
> One receiver sits at home feeding its data to a PC, while the other
> travels around in my car feeding data to a notebook computer.
> A draw-back is that the data files can get large (maybe 1 Mb/hour).
>
> The good news is that I observe very few cycle-slips in the carrier
> phase as I drive around (however, I live where that aren't many trees
> taller than a man's head!). The good carrier phase data means that
> double-difference carrier-phase processing is possible, even tho
> the Oncore lacks the L2 frequency and P-code features that the
> survey-quality GPS receivers have.
>
> Just how good a job can be done with just the L1 phase and C/A code
> remains to be seen - I'm still working on it, and other folks may
> already know the answer. The noise level in the Oncore carrier phase
> measuring circuit is respectably low. Using one antenna, a splitter, and
> two
> receivers I measured 1.2 mm (!) rms phase noise by double differencing a
> pair of satellites (see Sam's page). It gives me some hope that accuracy
> at the few mm level might be possible if the two rcvrs aren't too far

> apart (a few miles). It's mainly a problem in mathematics.
>
> It's amusing to think of a couple of Oncores in the same league as
> $50,000 Trimble geodetic setup!
>
> Brooks
>
> --------------Don Robinson wrote---
> >I am however interested in using another ONCORE (or similar) receiver and
> >doing post corrections rather than real time. I am aware of Sams pages on
> >the www but I would be interested in any experience or assistance anyone
> >in the group can give - or even just some pointers to information. I guess
> >the ultimate would be a program that takes info from both the base and
> >rover receiver and processes the info to give corrected positions. I am
> >not looking for high accuracy (5 - 10 m) would be useable but more would
> >be a bonus.
> >
> >I notice in summer 98 Packet Status Register the Dr Thomas Clark makes
> >mention that there is some work in progress in this area. Does anyone have
> >any news of this? Is there any help that I could maybe give to the group
> >in this area.
>
> ---
> You are currently subscribed to tacgps as: LERMAN@LERMAN.NAI.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

85. [tacgps] GPS errors

From: Dan Hinz <dan.hinz@ieee.org>
Date: Sun, 31 Jan 1999 10:03:24 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2628-1999.01.31-12.05.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Again to all thanks for the information.
I tried the the trimble web site and it was exactly what I was after.
It allows you to enter a date & time along with a location and it will
provide you with a bunch of information about the GPS satellites. I
used it to verify that the numbers logged by my receiver were pretty
much in agreement with what would have been expected at the time of my
anomoly.

As an aside, the GPS receiver quit yesterday. I had to turn it off to
reset it.

I have restarted gathering data in the 3-D mode vice the 2-D mode in
case I had entered a bad altitude. I don't think I did, as I used a
seven day average, but it should prove interesting.
Thanks for the info on signal strengths.

73,
Dan, W6LSN

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

86. [tacgps] Re: DGPs and post correction.

From: Rick Gilligan <rickg@case.net>
Date: Sun, 31 Jan 1999 10:56:05 -0800 (PST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2635-1999.01.31-12.56.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sun, 31 Jan 1999, Don Robinson wrote:

> Thanks for your helpful reply. I probably need to obtain the MOTOROLA
> reference manual for the ONCORE and download some of the single difference
> code from Sams pages to get me started. Any idea if the Motorola manual is
> available on line?

Try starting at:

        http://www.mot.com/ACCES/GPS/products/gpsprod.html

They are all available in PDF in chapters. They are identical to the hard
copy I purchased last year.

The table of which receivers have which features is very handy.

73
Rick
N6NL

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

February 1999

Original source file: tacgps.9902
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9902

1. [tacgps] Re: DGPs and post correction.

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Mon, 1 Feb 1999 13:04:19 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-2817-1999.02.01-12.03.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I found the exact address for the Motorola Oncore GPS reference manual
to be:
  www.mot.com/ACCES/GPS/products/manual.html
I had been at this site before, but all I could find were the 1 or 2 page
brochures of each board product.
I got to this page by using the search engine with "oncore reference manual".
 Thanks for the pointer.
  Jim Korenz

bounce-tacgps-5599@lists.tapr.org on 01/31/99 01:58:06 PM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Re: DGPs and post correction.

On Sun, 31 Jan 1999, Don Robinson wrote:

> Thanks for your helpful reply. I probably need to obtain the MOTOROLA
> reference manual for the ONCORE and download some of the single difference
> code from Sams pages to get me started. Any idea if the Motorola manual is
> available on line?

Try starting at:

 http://www.mot.com/ACCES/GPS/products/gpsprod.html

They are all available in PDF in chapters. They are identical to the hard
copy I purchased last year.

The table of which receivers have which features is very handy.

73
Rick
N6NL

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] Re: DGPs and post correction.

From: "Doug McKinney" <buoy@redshift.com>
Date: Tue, 2 Feb 1999 07:47:13 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3023-1999.02.02-10.01.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: JIM KORENZ <jfkorenz@goodyear.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Monday, February 01, 1999 10:02 AM
Subject: [tacgps] Re: DGPs and post correction.

Excellant find!! This will save you $50. This is a required manual for
anyone playing with the ONCORE!!
Doug
KC3RL

> I found the exact address for the Motorola Oncore GPS reference manual
>to be:
> www.mot.com/ACCES/GPS/products/manual.html
>I had been at this site before, but all I could find were the 1 or 2 page
>brochures of each board product.
>I got to this page by using the search engine with "oncore reference
manual".
> Thanks for the pointer.
> Jim Korenz
>
>
>
>
>
>bounce-tacgps-5599@lists.tapr.org on 01/31/99 01:58:06 PM
>Please respond to tacgps@lists.tapr.org @ INTERNET
>To: tacgps@lists.tapr.org @ INTERNET
>cc:
>Subject: [tacgps] Re: DGPs and post correction.
>
>On Sun, 31 Jan 1999, Don Robinson wrote:
>
>> Thanks for your helpful reply. I probably need to obtain the MOTOROLA
>> reference manual for the ONCORE and download some of the single
difference
>> code from Sams pages to get me started. Any idea if the Motorola manual
is
>> available on line?
>
>Try starting at:
>
> http://www.mot.com/ACCES/GPS/products/gpsprod.html
>
>They are all available in PDF in chapters. They are identical to the hard
>copy I purchased last year.
>
>The table of which receivers have which features is very handy.
>
>73
>Rick
>N6NL
>
>
>
>---
>You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
>
>---
>You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] Re: DGPs and post correction.

From: Brooks Shera <ebs@lanl.gov>
Date: Tue, 2 Feb 1999 09:48:34 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3029-1999.02.02-10.45.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I agree - it is an excellant find. However, this manual appears
to be for the "T" series Oncores, the UT and the GT. If you are
interested in post processing you will also need info on the
range data output message, @@Eg, and perhaps some others messages
that are unique to the VP models.

Perhaps the VP manual is also hiding soemwhere on the Motorola
website??

Brooks

>Excellant find!! This will save you $50. This is a required manual for
>anyone playing with the ONCORE!!

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Re: White House Announcement

From: "Pete Prossen" <prossen@znet.com>
Date: Tue, 2 Feb 1999 09:03:34 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3033-1999.02.02-11.04.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Regarding the future availability of C/A to L2, and maybe
an L3 frequency: Could someone explain what improved
services this might provide?

Would it obsolete any current services?

Pete Prossen
WA6ZUH

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] National DGPS?

From: Brooks Shera <ebs@lanl.gov>
Date: Tue, 2 Feb 1999 11:52:47 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3059-1999.02.02-12.49.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Does anyone know anything more about the following item which
came from a recent ION conference (reported 2/1/99 by an Ashtech OEM
newsletter on the sci.geo.satellite-nav newsgroup)?

>National DGPS. A Peace Dividend: The first GWEN DGPS sites will be
>activated in March 1999. GWEN (Ground Wave Emergency Network) is a
>remnant of the cold war, instead of decomissioning these powerful radio
>transmitters, the US government is fitting them with GPS base stations,
>enhancing the USCG system of base stations. This means FREE DGPS over
>the entire USA, southern Canada, and Northern Mexico. Test sites have
>already shown that the GWEN system looks and behaves just like the USCG
>DGPS system.

Brooks

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: National DGPS?

From: "Ira A. Wilner" <bdcst@sover.net>
Date: Tue, 2 Feb 1999 14:27:48 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3063-1999.02.02-13.29.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Brooks Shera <ebs@lanl.gov>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Tuesday, February 02, 1999 1:50 PM
Subject: [tacgps] National DGPS?

:Does anyone know anything more about the following item which
:came from a recent ION conference (reported 2/1/99 by an Ashtech OEM
:newsletter on the sci.geo.satellite-nav newsgroup)?

:
:>National DGPS. A Peace Dividend: The first GWEN DGPS sites will be
:>activated in March 1999. GWEN (Ground Wave Emergency Network)

Hello Brooks,

I believe that the US Dept's of Commerce & Transportation have been pushing
for the re-use of the abandoned GWEN sites as DGPS transmitter sites.
Funding was a bit iffy for a while. The impetus was to provide greater
accuracy for railroads, trucking and other ground based transportation
systems that wish to rely upon GPS for logging, tracking and control of
their traffic.

The goal was to have DGPS beacon signals available across the entire US
mainland. Re-using the GWEN sites was viewed as a way to add DGPS stations
for less money than it would take to build new facilties from scratch.

I assume that the antenna farm at a GWEN site might provide somewhat greater
groundwave coverage than the typical Coast Guard DGPS beacon.

--Ira

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] Re: National DGPS?

From: Brooks Shera <ebs@lanl.gov>
Date: Tue, 2 Feb 1999 16:48:58 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3123-1999.02.02-17.45.17--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Ira

Thanks for the information. After getting your note I did a little
web searching and found

http://www.mich.com/~ttyler/C3I/Bunkers/SITE-R/Site-GWEN.htm

which has a picture of a site, with its 300' antenna, and suggests
that the locations of these sites is still secret. Maybe that has
changed
now, it would be interesting to know the distance to the nearest one.

Brooks

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] National DGPS - Web References

From: David Martin <drmartin@ivie.com>
Date: Tue, 02 Feb 1999 17:58:57 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3138-1999.02.02-18.59.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brooks Shera asked "it would be interesting to know the distance to the
nearest one."

Some time ago I ran across a preliminary report on converting old GWEN
sites to DGPS sites. The report listed the location of the GWEN sites to
be converted. Note that not all of the 54 to 58 GWEN sites are listed as
some of them were not used by the proposed DGPS system.

The report lists the Lat/Lon, Transmit Power, and Frequency of existing and
proposed stations.

The report can be found at:

http://www.tfhrc.gov/its/perform/perform.htm#tab4

Also a graphic showing the coverage of existing and proposed stations can
be located at:

http://www.csi-dgps.com/home/beacons/maps/usa.htm

I hope this is of interest to the group.....

David Martin
WA7FFM

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Re: DGPs and post correction.

From: Allan Gibbs <allan@prescot.demon.co.uk>
Date: Wed, 3 Feb 1999 18:59:50 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3337-1999.02.03-13.20.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bits snipped....

>> I found the exact address for the Motorola Oncore GPS reference manual
>>to be:
>> www.mot.com/ACCES/GPS/products/manual.html
>>I had been at this site before, but all I could find were the 1 or 2 page
>>brochures of each board product.
>>I got to this page by using the search engine with "oncore reference
>manual".
>> Thanks for the pointer.
>> Jim Korenz

I wouldn't claim it *always* works, but on some occasions I've found
going into the site's search engine and doing a *.pdf search can throw
up the file you're looking for.

Depends of course on the required manual/document having a known
extension, .pdf or whatever!!

Regards,

Allan

--
Allan Gibbs - Prescot, Merseyside, U.K

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Thu, 4 Feb 1999 09:52:50 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3527-1999.02.04-11.56.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

I have been using TAC32 registered version 2.00 and seem to have a minor
problem with the
display of the Satellite Azimuth-Elevation Chart. I can leave it displayed
so it creates a picture
of the satellite positions but then if a open another window over it then
close that window the
Satellite Azimuth-Elevation Chart will be blank. Some of the characters on
the TAC32 display
will also be scrambled. This happens only after the Satellite
Azimuth-Elevation Chart has been
opened for a number of hours. The only way to get things back to normal is
to restart TAC32. I
have tried this on three different computers and it only happens on one of
them. It works on my
notebook computer with LCD display and 16 Meg of memory. It works on my 100
MHz Pentium
with super VGA PCI card and 32 Meg of memory. It does not work with my 166
MHz Pentium
with super VGA PCI card and 64 Meg of memory. Does anyone know if I might

have a video
configuration setting wrong? Has anyone seen this before?

Garren Davis
g_davis@qlc.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] GPS Antenna In-Vehicle AZ-EL Performance

From: Mastenbrook Gary-G13216 <g13216@email1.wes.mot.com>
Date: Fri, 5 Feb 1999 12:51:53 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3706-1999.02.05-12.52.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For those interested in how their GPS antennas might behave while inside
their vehicle, I've posted a "typical" graph showing AZ-EL performance of a
glass-mount GPS antenna (located on the top edge 'inside' of the vehicle's
front windshield) on my web page at:

http://www.qsl.net/n8dmt/

(From the main page, first go to the "Antennas" page and then look for the
first link below the range photograph to go to the "GPS antenna's AZ-EL
performance" page.)

If anyone has any suggestions for alternate ways of viewing this type of
information, please let me know via n8dmt@qsl.net, or the email address
below.

Thanks!

73's

Gary N8DMT

Gary Mastenbrook, Technology Manager, Motorola Telematics
50 E. Commerce Drive, Schaumburg, IL 60173
Email: g13216@email.mot.com
Work Home Page: http://www.mot.com
Personal Home Page: http://www.qsl.net/n8dmt

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] RE: Display problems

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Fri, 5 Feb 1999 14:36:51 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3710-1999.02.05-13.37.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Garren,

I am the author of Tac32. The problem you describe has been reported once
before. I have not been able to determine the cause but it remains an open
issue and will eventually get fixed I hope. What I really need is a way to
duplicate the problem.

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
Sent: Thursday, February 04, 1999 12:53 PM
To: TAPR Special Interest Group
Subject: [tacgps] Display problems

Hi,

I have been using TAC32 registered version 2.00 and seem to have a minor problem with the display of the Satellite Azimuth-Elevation Chart. I can leave it displayed so it creates a picture of the satellite positions but then if a open another window over it then close that window the Satellite Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32 display will also be scrambled. This happens only after the Satellite Azimuth-Elevation Chart has been opened for a number of hours. The only way to get things back to normal is to restart TAC32. I have tried this on three different computers and it only happens on one of them. It works on my notebook computer with LCD display and 16 Meg of memory. It works on my 100 MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does anyone know if I might have a video configuration setting wrong? Has anyone seen this before?

Garren Davis
g_davis@qlc.com

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] RE: Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Fri, 5 Feb 1999 11:46:44 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3711-1999.02.05-13.50.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard,

I don't know if this will help but I have a little more information about the problem.
I let the program run overnight with the Azimuth-Elevation Chart window open. In the morning I tried to start a DOS window so I could issue a MEM command. The DOS window would not start because Windows came back with a message that said there was not enough memory. I tried to open the 'My Computer' icon but windows came back with a message that said there was not enough resources. I don't know if this means that TAC32 is eating up memory somehow. The other two computers I have don't have this problem so it seems like there is a setting in the CMOS setup that is not right. Let me know if you want me to try anything to help with this.

Garren
g_davis@qlc.com

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Friday, February 05, 1999 11:37 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Garren,

I am the author of Tac32. The problem you describe has been reported once before. I have not been able to determine the cause but it remains an open issue and will eventually get fixed I hope. What I really need is a way to duplicate the problem.

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

-----Original Message-----

From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
Sent: Thursday, February 04, 1999 12:53 PM
To: TAPR Special Interest Group
Subject: [tacgps] Display problems

Hi,

I have been using TAC32 registered version 2.00 and seem to have a minor problem with the display of the Satellite Azimuth-Elevation Chart. I can leave it displayed so it creates a picture of the satellite positions but then if a open another window over it then close that window the Satellite Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32 display will also be scrambled. This happens only after the Satellite Azimuth-Elevation Chart has been opened for a number of hours. The only way to get things back to normal is to restart TAC32. I have tried this on three different computers and it only happens on one of them. It works on my notebook computer with LCD display and 16 Meg of memory. It works on my 100 MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does anyone know if I might have a video configuration setting wrong? Has anyone seen this before?

Garren Davis
g_davis@qlc.com

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] RE: Display problems

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Fri, 05 Feb 1999 12:44:20 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3720-1999.02.05-14.45.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Garren and Rick,
   I tried Garren's conditions and I have the same problem. I have had the "averaging parameters" window up for several days with many windows coming and going on top of it and I've never had a problem with it. Then I set up Garren's
situation - Az-El window up and I left it overnight. When I came in this morning,
the TAC32 and the Az-El windows both had white space where you would normally see their data. As I was writing this memo, I noticed that the response to my typing
was very slow so I checked the system performance through the task manager and found that TAC32 was using 99% of the CPU time and the CPU was being taxed to its fullest (100%). I stopped TAC32 from the task manager and the CPU usage was down to 1% (system idle, essentially). The system I'm using is an HP Kayak XA
computer (Pentium II, 250 MHz), 64M RAM, WinNT 4.0/service pack 3. I'll be glad to modify the BIOS or whatever other testing you'd like me to do to help solve
this problem.

73,
Jim W6SC

Garren Davis wrote:

> Richard,
>
> I don't know if this will help but I have a little more
> information about the problem.
> I let the program run overnight with the Azimuth-Elevation Chart
> window open. In the morning I tried to start a DOS window so I
> could issue a MEM command. The DOS window would not start because

> Windows came back with a message that said there was not enough
> memory. I tried to open the 'My Computer' icon but windows came
> back with a message that said there was not enough resources. I
> don't know if this means that TAC32 is eating up memory somehow.
> The other two computers I have don't have this problem so it seems
> like there is a setting in the CMOS setup that is not right. Let
> me know if you want me to try anything to help with this.
>
> Garren
> g_davis@qlc.com
>
> -----Original Message-----
> From: Richard M. Hambly [mailto:rick@cnssys.com]
> Sent: Friday, February 05, 1999 11:37 AM
> To: TAPR Special Interest Group
> Subject: [tacgps] RE: Display problems
>
> Garren,
>
> I am the author of Tac32. The problem you describe has been reported once
> before. I have not been able to determine the cause but it remains an open
> issue and will eventually get fixed I hope. What I really need is a way to
> duplicate the problem.
>
> Rick
> WB2TNL
>
> Richard M. Hambly
> CNS Systems, Inc.
> (410) 987-7835
> rick@cnssys.com
> http://www.cnssys.com/
>
> -----Original Message-----
> From: bounce-tacgps-5621@lists.tapr.org
> [mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
> Sent: Thursday, February 04, 1999 12:53 PM
> To: TAPR Special Interest Group
> Subject: [tacgps] Display problems
>
> Hi,
>
> I have been using TAC32 registered version 2.00 and seem to have a minor
> problem with the display of the Satellite Azimuth-Elevation Chart. I can
> leave it displayed so it creates a picture of the satellite positions but
> then if a open another window over it then close that window the Satellite
> Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32
> display will also be scrambled. This happens only after the Satellite
> Azimuth-Elevation Chart has been opened for a number of hours. The only way
> to get things back to normal is to restart TAC32. I have tried this on three
> different computers and it only happens on one of them. It works on my
> notebook computer with LCD display and 16 Meg of memory. It works on my 100
> MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work
> with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does
> anyone know if I might have a video configuration setting wrong? Has anyone
> seen this before?
>
> Garren Davis
> g_davis@qlc.com
>
> ---
> You are currently subscribed to tacgps as: RICK@CNSSYS.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: JJOHNSON@HPL.HP.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

--

Jim Johnson
Hewlett-Packard Laboratories
Palo Alto, CA
jjohnson@hpl.hp.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Sv: RE: Display problems

From: "KPo_LH Mobilradio A/S" <kpo@lhmobil.dk>
Date: Fri, 5 Feb 1999 23:32:21 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3723-1999.02.05-15.39.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Ric W2TNL and all other on the group

I just saw you on the TAPR group, and take the liberty to ask You about another problem I have "battled" for some time.
I use Tac32 as the controller for the TAPR DGPS system and has the problem, that when I use a Leica DPGS source (the public DGPS RTCM104 signal provided by the natianal Geographic institute) I see on several different GPS receiver - all LowRance Globenav100/200/212 or the new Globemap 100 - an altitude of 9 meter. If I enter that altitude in Your software for the reference location (and the Lat Long also found using the Leica signal which gived me an horizontal accuracy less than a meter) I do get wrong results using the TAPR DGPS UNit an the very same receiver.
I use same antenna for the GPS receiver and the DGPS receiver.
But as said when i use the TAPR DGPS unit the altitude decreases by 44 meters which is pretty close to the Geoid-Ellipsoid difference 43.04 meter displayed in your software.
Could it be that You software is initializing the wrong reference in the Motorola Oncore VP ? or shall that be done manuallly ??
If I compensate for the measure height in the reference location then the measured height decreases accordingly, so I will end up visiting the China Man on the other side of the Globe, if carrying on.

Othervice the Tac32 is an excelent software, with many thanks from a happy registred user, using version 2.0.0
And the ASHTECH software EVALUATE is just a perfect match. (Just proved another problem in have noticed that the TAPR DGPS signal position correction locks frequencly with an offset due east by 10 meter. Just switch off power to the "TAPR Combo" and it is instantly back on position)

Hope for a comment

Kurt de OZ7OU

-----Oprindelig meddelelse-----
Fra: Richard M. Hambly <rick@cnssys.com>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Dato: fredag, februar 05, 1999 08:37
Emne: [tacgps] RE: Display problems

>Garren,
>
>I am the author of Tac32. The problem you describe has been reported once
>before. I have not been able to determine the cause but it remains an open
>issue and will eventually get fixed I hope. What I really need is a way to
>duplicate the problem.
>
>Rick
>WB2TNL
>
>Richard M. Hambly
>CNS Systems, Inc.
>(410) 987-7835
>rick@cnssys.com
>http://www.cnssys.com/
>
>
>-----Original Message-----
>From: bounce-tacgps-5621@lists.tapr.org
>[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
>Sent: Thursday, February 04, 1999 12:53 PM
>To: TAPR Special Interest Group
>Subject: [tacgps] Display problems
>
>Hi,
>
>I have been using TAC32 registered version 2.00 and seem to have a minor
>problem with the display of the Satellite Azimuth-Elevation Chart. I can
>leave it displayed so it creates a picture of the satellite positions but
>then if a open another window over it then close that window the Satellite
>Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32

>display will also be scrambled. This happens only after the Satellite
>Azimuth-Elevation Chart has been opened for a number of hours. The only way
>to get things back to normal is to restart TAC32. I have tried this on three
>different computers and it only happens on one of them. It works on my
>notebook computer with LCD display and 16 Meg of memory. It works on my 100
>MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work
>with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does
>anyone know if I might have a video configuration setting wrong? Has anyone
>seen this before?
>
>Garren Davis
>g_davis@qlc.com
>
>---
>You are currently subscribed to tacgps as: RICK@CNSSYS.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>---
>You are currently subscribed to tacgps as: LHMOBIL@POST4.TELE.DK
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] Sv: RE: Display problems

From: "KPo_LH Mobilradio A/S" <kpo@lhmobil.dk>
Date: Sat, 6 Feb 1999 01:33:18 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3737-1999.02.05-17.40.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Rich WB2TNL and others

I have just issued some questions about TAC32 and my altitude problem.
It looks like I have found the source myself.
Sometimes it helps to explaint the problem to others to solve it one-self

The error is aparently in a document "The NMEA FAQ Version 6.1 sept15, 1997 which defines for NMEA184
$GPGGA that the 43 meters are "Height og Geoid (mean sea level) above WGS84 ellipsoid" it must be below
and thus an printing error.
I came thus to the conclusion that this difference was negative, but if I enter the WSG84 level 43 meter
 higher than Mean Sea Level then the GPS receiver reads the correct altitude (Mean Sea Level readout)

Sorry for "the fuss on the channel"

You might or others give me an OK, that I am right in this conclusion

Thank You

Kurt de OZ7OU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: White House Announcement

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Sat, 06 Feb 1999 05:00:26 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3776-1999.02.05-23.03.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Pete Prossen (WA6ZUH) asked:
>
> Regarding the future availability of C/A to L2, and maybe
> an L3 frequency: Could someone explain what improved
> services this might provide?
>
> Would it obsolete any current services?
>
> Pete Prossen
> WA6ZUH

First -- NOTHING is made obsolete. This is an enhancement.
The main thing that will improve is ACCURACY. To make this point,
let me define some buzz-words.

 L1 = The current frequency used by all cheap receivers = 1575.42 MHz =
      154*10.23 = 19cm wavelength

 L2 = The second frequency on the current satellites = 1227.60 MHz =
      120*10.23 = 24cm wavelength.

 L3 = The new frequency that will be added = 1176.45 MHz = 115*10.23 =
      25cm wavelength.

 C/A code = Simple spread-spectrum code used on GPS = 1023 bits sent
      at 1.023 Mb/sec = 977 nsec period = 295 meters/bit wavelength.
      A unique C/A code is assigned to each active satellite, and the
      code repeats with a 1.000 msec cycle = 300 km. C/A, sometimes
      just written CA, means Coarse Acquisition. The C/A code BPSK
      modulated the carrier in phase quadrature, resulting in a sin(x)/x
      spectrum 2.046 MHz wide between the first nulls.

 P Code = The high rate spreading code used on GPS, running at a rate
      of 10.23 Mb/sec = 29.5 meters/bit. The P-code is very long with
      a repeat interval ~37 weeks. The P in P-code means "Precision".
      The P-code is used as a second BPSK modulating signal and is
      in-phase with the carrier (and hence is in quadrature with the
      slower C/A code). The central lobe of P-code spectrum is shaped
      like sin(x)/x with 20.46 MHz between the first nulls. The GPS
      signals must fit into a ~25 MHz wide band, so the higher-order
      modulation sidelobes are filtered.

 P/Y Code = The DoD wanted to secure civilian access to the P-code, so
      they convolve it with a 2nd, slower rate encryption code running
      at a rate ~500 kb/sec. As far as I know, the Y in P/Y has no
      special meaning (but it gave a reason for Ashtech to call their
      "P/Y Killer" technique "Z"). The gross spectral characteristics
      of P/Y are similar to those for the unencrypted P-code.

 SA = Selective Availability. The DoD dithers all the time/frequency
      signals on GPS to degrade their accuracy for non-secure users.

 AS = Anti-Spoofing. This is the process of encrypting the published,
      public P-code into something that is less useful.

       -

Given those definitions, we note that the current GPS satellites have
the following signals:

    L1 = L1 carrier + C/A Code + P/Y code
    L2 = L2 carrier + P/Y code

For the new satellites to be launched starting in 2003, the structure will
be:

    L1 = L1 carrier + C/A Code + P/Y code
    L2 = L2 carrier + C/A Code + P/Y code
    L3 = L3 carrier + C/A Code + P/Y code

The simple/cheap receivers we use for amateur purposes all rely only on the
L1 carrier and C/A code. DSP hardware/software in the receiver locks up two
tracking loops per satellite -- one for the carrier and one for the C/A
code. The C/A code loop establishes the timing of the code vs. the internal
clock; this is usually called a pseudorange (PR). And it establishes the
carrier phase rate with respect to the receiver's local oscillator in the
second PLL; this is called the pseudorange rate (PRR). The PR relies on
the fact that the ~300 meters/bit code can be resolved to about 1%, i.e.
~ 3 meters with ambiguities at the 300 km level. The PRR uses the much
finer carrier phase "ruler" to establish your velocity. The navigation
firmware combines the two to produce a carrier-phase smoothed PR.

A receiver like the GPS-III tracks up to 12 satellites (i.e. 24 DSP
tracking
loops) and performs all the navigational computations with a dedicated
slab of silicon combined with an AT-class computer (actually, the -III has
a 386ex CPU) and achieves performance at levels of a few tens of meters.

More accurate GPS systems use the carrier phase differences between two

stations. Since the carrier phase "ruler" reflects the 19 cm L1 "ruler",
these differenced carrier phase receivers achieve sub-cm performance. But
a simple L1 receiver only produces such results on relatively short
baselines for two reasons:

 (a) The carrier phase is ambiguous at one wavelength (19 cm) intervals.
     Post processing software must look for the set of integer ambiguities
     by a fairly brute force search.

 (b) At L-band the ionosphere adds a phase shift equivalent to ~5 to 10
     meters. If the baseline is short, then you can assume that the
ionosphere
     has identical at each end of the baseline. But if the baseline is more
than
     10-20 km, this assumption breaks down.

So conventional practice is to use both L1 & L2 observables. The ~10 meter
ionospheric bias varies as the inverse-square of the frequency. So at L2
the effect is 1.283**2 = 1.657 times what it is at L1. The carrier phases
at
L1 & L2 can be combined to determine the ionospheric bias.

Then the corrected phases at L1(19 cm) and L2(24 cm) can be combined to
produce a difference observable at a frequency (L1-L2)=347.8 MHz with a
86 cm ambiguity spacing, cutting the number of ambiguities that have to
be searched by a factor ~4.

So the key to doing high accuracy work is to use (at least) 2 frequencies.
But the DoD made it hard to use L2 -- it has no easy-to-detect C/A code.
The complexity of using the non-repeating (37 weeks is like forever!)
P-code
and the further ugliness due to the P/Y code being encrypted has made dual
frequency L1/L2 receivers be $25,000 boxes a few years ago (and ~$10,000
boxes today).

So, when the new GPS satellites become available, we will have an easy-to-
detect C/A code on both frequencies. A dual-frequency receiver will be no
more complicated then two hand-held Garmins and will be able to be used
for sub-cm level surveying!

For the amateur, the same dual-frequency C/A code will allow every HF
operator to have a real-time ionosphere measuring engine in his shack.

The addition of similar signals at L3, only 50 MHz away from L2, will
result in an ambiguity spacing out to ~6 meters, comparable to the
positional
determination capability of the C/A code PRs, so there will be no need
to do brute-force ambiguity resolution to achieve high accuracies. This
will mean that kinematic GPS will get to be a LOT easier. Cheap GPS
hardware
can then be used for precision motion control/measurement -- docking
ferries, monitoring dams and bridges, guiding construction cranes, etc.

My only regret is that we were not able to convince the DoD about these
changes earlier. From the current schedule, it will be 2003 before we
see the first of the new satellites, so we have to live with the present
system for another ~decade before the new capabilities will be available.

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] SA Watch site?

From: Eduardo Jacob <edu@kender.es>
Date: Sat, 06 Feb 1999 10:25:47 -0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3798-1999.02.06-03.35.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have been searching SA Watch site (www.mutadv.com) for a while and it
seems it has dissapeared. Does any know where can I find it?

        Regards

        Eduardo

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] 10 Mhz Reference oscilator

From: Eduardo Jacob <edu@kender.es>
Date: Sat, 06 Feb 1999 10:33:33 -0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3799-1999.02.06-03.35.15--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a Motorola Oncore VP and I would like to have a 10 Mhz reference
steered from the GPS. I have several questions.

1) Is there a way to use a VXCO with Brook's setup?, if so, which would be
the rigth VXCO to get?

2) Which is the best stability in ppm I can get with this setup (I would
like to know if you can get a net improvement over the TXCO option for HAM
use)

3) I have a Motorola Antenna AN-97 How would you waterproof it if possible
or what would you get as a GPS roof antenna.

Eduardo/EA2BAJ

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] RE: Sv: RE: Display problems

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sat, 6 Feb 1999 08:22:02 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3807-1999.02.06-07.22.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kurt,

The geoid height is not always above the ellipsoid, it varies as you move
around the surface of the Earth. That is why the Manual Reference Location
dialog box in Tac32 includes an automatic calculator of this separation and
shows what the GPS receiver is reporting as the separation (they should
agree). If you only know MSL (geoid) then only enter MSL. When you leave
the MSL box, the ellipsoid height will be re-calculated automatically. If
you know the ellipsoid height use that instead.

There were firmware bugs in many early Motorola GPS receivers that resulted
in incorrect reported of these values. Tac32 understands these bugs and
corrects for them. Other software does not.

I do not believe that Tac32 has a problem in this area but I am often
surprised. Bugs are constantly being exposed and I work on them as quickly
as I can. If you are still having a problem let me know.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of KPo_LH Mobilradio
A/S
Sent: Friday, February 05, 1999 7:33 PM
To: TAPR Special Interest Group
Subject: [tacgps] Sv: RE: Display problems

Hello Rich WB2TNL and others

I have just issued some questions about TAC32 and my altitude problem.
It looks like I have found the source myself.
Sometimes it helps to explaint the problem to others to solve it one-self

The error is aparently in a document "The NMEA FAQ Version 6.1 sept15, 1997
which defines for NMEA184 $GPGGA that the 43 meters are "Height og Geoid
(mean sea level) above WGS84 ellipsoid" it must be below and thus an

printing error.
I came thus to the conclusion that this difference was negative, but if I
enter the WSG84 level 43 meter higher than Mean Sea Level then the GPS
receiver reads the correct altitude (Mean Sea Level readout)

Sorry for "the fuss on the channel"

You might or others give me an OK, that I am right in this conclusion

Thank You

Kurt de OZ7OU

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] RE: Display problems

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sat, 6 Feb 1999 08:52:01 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3810-1999.02.06-07.52.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Garren and Jim,

I have been unable to duplicate this problem but I am still trying. I
consider this to be serious and I hope to be able to track it down. It is
interesting that it seems to be machine (or configuration) dependent. I
need as much information as possible about the configurations that have the
problems and those that don't. Screen savers, operating system version,
background programs, etc.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Jim JJ Johnson
(HPL)
Sent: Friday, February 05, 1999 3:44 PM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Hi Garren and Rick,
I tried Garren's conditions and I have the same problem. I have had the
"averaging parameters" window up for several days with many windows coming
and going on top of it and I've never had a problem with it. Then I set up
Garren's
situation - Az-El window up and I left it overnight. When I came in this
morning,
the TAC32 and the Az-El windows both had white space where you would
normally
see their data. As I was writing this memo, I noticed that the response to
my
typing
was very slow so I checked the system performance through the task manager
and
found that TAC32 was using 99% of the CPU time and the CPU was being taxed
to its fullest (100%). I stopped TAC32 from the task manager and the CPU
usage
was down to 1% (system idle, essentially). The system I'm using is an HP
Kayak
XA
computer (Pentium II, 250 MHz), 64M RAM, WinNT 4.0/service pack 3. I'll be
glad to modify the BIOS or whatever other testing you'd like me to do to
help
solve
this problem.

73,
Jim W6SC

Garren Davis wrote:

> Richard,
>
> I don't know if this will help but I have a little more
> information about the problem.
> I let the program run overnight with the Azimuth-Elevation Chart
> window open. In the morning I tried to start a DOS window so I
> could issue a MEM command. The DOS window would not start because
> Windows came back with a message that said there was not enough
> memory. I tried to open the 'My Computer' icon but windows came
> back with a message that said there was not enough resources. I
> don't know if this means that TAC32 is eating up memory somehow.
> The other two computers I have don't have this problem so it seems
> like there is a setting in the CMOS setup that is not right. Let
> me know if you want me to try anything to help with this.
>
> Garren
> g_davis@qlc.com
>
> -----Original Message-----
> From: Richard M. Hambly [mailto:rick@cnssys.com]
> Sent: Friday, February 05, 1999 11:37 AM
> To: TAPR Special Interest Group
> Subject: [tacgps] RE: Display problems
>
> Garren,
>
> I am the author of Tac32. The problem you describe has been reported once
> before. I have not been able to determine the cause but it remains an open
> issue and will eventually get fixed I hope. What I really need is a way
to
> duplicate the problem.
>
> Rick
> WB2TNL
>
> Richard M. Hambly
> CNS Systems, Inc.
> (410) 987-7835
> rick@cnssys.com
> http://www.cnssys.com/
>
> -----Original Message-----
> From: bounce-tacgps-5621@lists.tapr.org
> [mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
> Sent: Thursday, February 04, 1999 12:53 PM
> To: TAPR Special Interest Group
> Subject: [tacgps] Display problems
>
> Hi,
>
> I have been using TAC32 registered version 2.00 and seem to have a minor
> problem with the display of the Satellite Azimuth-Elevation Chart. I can
> leave it displayed so it creates a picture of the satellite positions but
> then if a open another window over it then close that window the Satellite
> Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32
> display will also be scrambled. This happens only after the Satellite
> Azimuth-Elevation Chart has been opened for a number of hours. The only
way
> to get things back to normal is to restart TAC32. I have tried this on
three
> different computers and it only happens on one of them. It works on my
> notebook computer with LCD display and 16 Meg of memory. It works on my
100
> MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work
> with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does
> anyone know if I might have a video configuration setting wrong? Has
anyone
> seen this before?
>
> Garren Davis
> g_davis@qlc.com
>
> ---

> You are currently subscribed to tacgps as: RICK@CNSSYS.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: JJOHNSON@HPL.HP.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

--

Jim Johnson
Hewlett-Packard Laboratories
Palo Alto, CA
jjohnson@hpl.hp.com

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Sv: RE: Sv: RE: Display problems

From: "KPo_LH Mobilradio A/S" <kpo@lhmobil.dk>
Date: Sat, 6 Feb 1999 16:41:49 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3817-1999.02.06-08.48.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dear Rick

Thank You for Your prompt reply. I understand Your point, and my problem was being "so minded" to take the guidince in the referenced document for granted, it should then have said above or below.
Your software is super in this respect but when one gets the facts mixed then ....

Thank You once again

Kurt de OZ7OU

I have a comment to those reading this:
The "nice gift" Evaluate from ASHTECH is generation corrupted log files. They are containing all the data, but reading by Evalute creates zero data. Removing the first few lines by a text editor, and it is read allright.
If anerror message shows up, at the end of reading, saying "No epochs data in the file or an error occured on analyzing" then removing few lines does not help. This latter problem occur almost constantly on my Win95 machine not on the Win98.
Ashtech is notified about this.

de Kurt

-----Oprindelig meddelelse-----
Fra: Richard M. Hambly <rick@cnssys.com>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Dato: lørdag, februar 06, 1999 02:22
Emne: [tacgps] RE: Sv: RE: Display problems

>Kurt,
>
>The geoid height is not always above the ellipsoid, it varies as you move
>around the surface of the Earth. That is why the Manual Reference Location
>dialog box in Tac32 includes an automatic calculator of this separation and
>shows what the GPS receiver is reporting as the separation (they should
>agree). If you only know MSL (geoid) then only enter MSL. When you leave
>the MSL box, the ellipsoid height will be re-calculated automatically. If
>you know the ellipsoid height use that instead.
>
>There were firmware bugs in many early Motorola GPS receivers that resulted
>in incorrect reported of these values. Tac32 understands these bugs and
>corrects for them. Other software does not.
>

>I do not believe that Tac32 has a problem in this area but I am often
>surprised. Bugs are constantly being exposed and I work on them as quickly
>as I can. If you are still having a problem let me know.
>
>Rick
>WB2TNL
>
>
>-----Original Message-----
>From: bounce-tacgps-5621@lists.tapr.org
>[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of KPo_LH Mobilradio
>A/S
>Sent: Friday, February 05, 1999 7:33 PM
>To: TAPR Special Interest Group
>Subject: [tacgps] Sv: RE: Display problems
>
>
>Hello Rich WB2TNL and others
>
>I have just issued some questions about TAC32 and my altitude problem.
>It looks like I have found the source myself.
>Sometimes it helps to explaint the problem to others to solve it one-self
>
>The error is aparently in a document "The NMEA FAQ Version 6.1 sept15, 1997
>which defines for NMEA184 $GPGGA that the 43 meters are "Height og Geoid
>(mean sea level) above WGS84 ellipsoid" it must be below and thus an
>printing error.
>I came thus to the conclusion that this difference was negative, but if I
>enter the WSG84 level 43 meter higher than Mean Sea Level then the GPS
>receiver reads the correct altitude (Mean Sea Level readout)
>
>Sorry for "the fuss on the channel"
>
>You might or others give me an OK, that I am right in this conclusion
>
>Thank You
>
>Kurt de OZ7OU
>
>
>
>---
>You are currently subscribed to tacgps as: RICK@CNSSYS.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>---
>You are currently subscribed to tacgps as: LHMOBIL@POST4.TELE.DK
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Bug report on Ashtech software Evaluate

From: "KPo_LH Mobilradio A/S" <kpo@lhmobil.dk>
Date: Sat, 6 Feb 1999 16:48:00 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3819-1999.02.06-08.54.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dear all using the very nice Evaluate from Ashtech

I have noticed the following
The "nice gift" Evaluate from Ashtech is generation corrupted log files. They are containing all the data, but reading by Evalute creates zero data. Removing the first few lines by a text editor, and it is read allright.
If an error message shows up, at the end of reading, saying "No epochs data in the file or an error occured on analyzing" then removing few lines does not help. This latter problem occur almost constantly on my Win95 machine not on the Win98. Should any see the same problem and know an easy fix then I would be happy to know.

Ashtech is notified about this.

OZ7OU de Kurt

24. [tacgps] Re: SA Watch site?

From: Jeff Vollin <barnie@flash.net>
Date: Sat, 06 Feb 1999 10:46:17 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3830-1999.02.06-11.47.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Try:
 http://www.sni.net/kawin/pages/sawhatis.htm

Jeff Vollin

Eduardo Jacob wrote:

> I have been searching SA Watch site (www.mutadv.com) for a while and it
> seems it has dissapeared. Does any know where can I find it?
>
>   Regards
>
>   Eduardo
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] Re: 10 Mhz Reference oscilator

From: Jeff Vollin <barnie@flash.net>
Date: Sat, 06 Feb 1999 12:24:24 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3846-1999.02.06-13.25.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Eduardo:

1. I am doing just what you suggest, but my setup is not yet functioning as I

have not had time to finish it. As far as the oscillator is concerned, the
units
from RAKON in New Zealand are the cheapest I have seen with specified
phase noise. The values they quote are good for the money (~$18 US) but
are not spectacular. A recent article in QEX has a 50 MHz reference
oscillator
which is a substantial improvement, but it requires fabrication by you. See
Jan/Feb, 1999 pg. 38 in "Experiments with Phase Noise Measurement" by
Jos. F.M. van der List, PAOJ0Z.

Has anyone out there got any better oscillators, wrt phase noise?

2. I would refer you to Brooks' article in QST for that

3. Don't Know

Eduardo Jacob wrote:

> I have a Motorola Oncore VP and I would like to have a 10 Mhz reference
> steered from the GPS. I have several questions.
>
> 1) Is there a way to use a VXCO with Brook's setup?, if so, which would be
> the rigth VXCO to get?
>
> 2) Which is the best stability in ppm I can get with this setup (I would
> like to know if you can get a net improvement over the TXCO option for HAM
> use)
>
> 3) I have a Motorola Antenna AN-97 How would you waterproof it if possible
> or what would you get as a GPS roof antenna.
>
>   Eduardo/EA2BAJ
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] Re: 10 Mhz Reference oscilator

From: Brooks Shera <ebs@lanl.gov>
Date: Sat, 6 Feb 1999 14:41:09 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3858-1999.02.06-15.37.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Eduardo

>I have a Motorola Oncore VP and I would like to have a 10 Mhz reference
>steered from the GPS. I have several questions.
>
>1) Is there a way to use a VXCO with Brook's setup?, if so, which would be
>the rigth VXCO to get?

The controller was designed to be used with a VCXO. You probably want to
use an ovenized VCXO, that is, one that is temperature controlled, if you
are going to go to the trouble of building the controller. The RAKON
suggested by Jeff Vollin looks promising but I haven't heard any results
from someone that used it yet. A surplus HP 10811 TCVCXO is a
popular choice. You can buy just the oscillator, but often you can
find a surplus frequency counter that contains the oscillator for about
the same price. (Or at least you could before July '98).

>2) Which is the best stability in ppm I can get with this setup (I would
>like to know if you can get a net improvement over the TXCO option for HAM
>use)
You can expect an frequency accuracy of perhaps 0.00003 ppm.
This is quite a bit better than any ham gear I am aware of.
>
>3) I have a Motorola Antenna AN-97 How would you waterproof it if possible
>or what would you get as a GPS roof antenna.

I believe the Motorola 97 is already waterproof.
>

Regards, Brooks

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] Re: 10 Mhz Reference oscilator

From: Eduardo Jacob <edu@kender.es>
Date: Sun, 07 Feb 1999 09:07:18 -0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3942-1999.02.07-02.08.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>The controller was designed to be used with a VCXO. You probably want to
>use an ovenized VCXO, that is, one that is temperature controlled, if you
>are going to go to the trouble of building the controller. The RAKON
>suggested by Jeff Vollin looks promising but I haven't heard any results
>from someone that used it yet. A surplus HP 10811 TCVCXO is a
>popular choice. You can buy just the oscillator, but often you can
>find a surplus frequency counter that contains the oscillator for about
>the same price. (Or at least you could before July '98).

        Is there a site where those are (still?) available, which is their aprox
price?

        Regards

        Eduardo

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Re: 10 Mhz Reference oscilator

From: Eduardo Jacob <edu@kender.es>
Date: Sun, 07 Feb 1999 15:45:23 -0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3952-1999.02.07-08.46.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Is there a site where those are (still?) available, which is their aprox
>price?

Uh... I intended the previous message only to Brook. I have find several
possible sources...

Eduardo/EA2BAJ

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] DGPS Ref Station with APRS?

From: Jeff Vollin <barnie@flash.net>
Date: Sun, 07 Feb 1999 09:36:09 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3970-1999.02.07-10.36.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to operate APRS and the TAPR Differential Reference
Station from one radio and one antenna. Does anyone have a way
of doing that? Some ideas I have not tried yet:

1. Wire two TNC's in parallel with provision for each to hear (at
audio frequencies) the other. This would simply tie Audio In, Audio
Out, and PTT together (wired OR) with some path from Audio
Out back to Audio In. The question here is will TNC#1 see
a packet collision if it hears itself? This also requires 2 TNC's.

2. A "squelched" RS-232 connection from the ref sta into the
RS-232 line from the APRS port. This would make one transmit
over the other and occasionally destroy a packet unless I built
in a FIFO or something like that.

3. Put the ref station on another serial port to the computer and
have APRS read from that port and then send out the data. (Sort
of like the weather port). The hitch here is that the Ref Station
data must be UNPROTO-ed to "RTCM" in order for the
remotes to copy the data properly.

Does anybody have any other ideas or criticisms of mine?

Jeff Vollin, KC6WFU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] Re: DGPS Ref Station with APRS?

From: "Pete Prossen" <prossen@znet.com>
Date: Sat, 6 Feb 1999 22:15:56 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3976-1999.02.07-12.31.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff Vollin wrote:

> I would like to operate APRS and the TAPR Differential Reference
> Station from one radio and one antenna. Does anyone have a way
> of doing that?

Jeff, I haven't done that so I'm not full of ideas yet. But I have used a
single radio and TNC with a half-duplex rover for calibrating my DGPS
reference station. I'm also preparing to track some aircraft with
differential
corrections in an attempt to obtain data on our local noise abatement
flight pattern. Big dispute here that needs to be resolved.

I'd like to exchange ideas with you, but since this may involve more
dialog and perhaps some diagrams, perhaps it should be done outside

of the list server.

Regards

Pete Prossen
WA6ZUH

prossen@znet.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: DGPS Ref Station with APRS?

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 7 Feb 1999 13:31:22 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3979-1999.02.07-13.33.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>> I would like to operate APRS and the TAPR Differential Reference
>> Station from one radio and one antenna. Does anyone have a way
>> of doing that?

Use a PIC with two serial interfaces. Mark one a priority line, and the
other will have to store any data while the other is being used. When the
priority channel finished, do not un-key, but throw in the APRS packet.
If there is no APRS packet, you win the big cigar.

>Jeff, I haven't done that so I'm not full of ideas yet. But I have used a
>single radio and TNC with a half-duplex rover for calibrating my DGPS
>reference station. I'm also preparing to track some aircraft with
>differential
>corrections in an attempt to obtain data on our local noise abatement
>flight pattern. Big dispute here that needs to be resolved.

Make the departure so hard to fly they will crash several airplanes a year,
and that will solve the problem.

Steve

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] Mobile DGPS

From: "Eric A. Cottrell" <eac@shore.net>
Date: Sun, 07 Feb 1999 17:59:53 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-3996-1999.02.07-17.01.40--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

I noticed the Garmin GBR-21 is cheaper now. I was thinking of getting one
and using it mobile in my car. Does anyone have experience with it and
what results did you get?

73 Eric eac@shore.net WB1HBU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

33. [tacgps] Re: DGPS Ref Station with APRS?

From: Jeff Vollin <barnie@flash.net>
Date: Sun, 07 Feb 1999 17:42:44 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4013-1999.02.07-18.43.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How would that send the APRS packets addressed to "APRS" and
the DGPS packets to "RTCM"? I think the only way to use 1 TNC
would be to operate it in either a proprietary host mode or KISS mode,
since the UNPROTO path must be changed depending on the packet's
origin. I think that functionality would have to be built into WinAPRS to
work, which it may be, I just do not know how to configure it.

Jeff

Steve Sampson wrote:

> >>   I would like to operate APRS and the TAPR Differential Reference
> >> Station from one radio and one antenna. Does anyone have a way
> >> of doing that?
>
> Use a PIC with two serial interfaces. Mark one a priority line, and the
> other will have to store any data while the other is being used. When the
> priority channel finished, do not un-key, but throw in the APRS packet.
> If there is no APRS packet, you win the big cigar.
>
> >Jeff, I haven't done that so I'm not full of ideas yet. But I have used a
> >single radio and TNC with a half-duplex rover for calibrating my DGPS
> >reference station. I'm also preparing to track some aircraft with
> >differential
> >corrections in an attempt to obtain data on our local noise abatement
> >flight pattern. Big dispute here that needs to be resolved.
>
> Make the departure so hard to fly they will crash several airplanes a year,
> and that will solve the problem.
>
> Steve
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

34. [tacgps] Re: DGPS Ref Station with APRS?

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 7 Feb 1999 19:10:10 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4016-1999.02.07-19.12.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Oh Oh, guess I need a third serial port to connect up KISS with the TNC :-)

-----Original Message-----
From: Jeff Vollin <barnie@flash.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Sunday, February 07, 1999 6:43 PM
Subject: [tacgps] Re: DGPS Ref Station with APRS?

>How would that send the APRS packets addressed to "APRS" and
>the DGPS packets to "RTCM"?

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] Tag32 and GarminXL12

From: "Roger Groenendaels" <roger.groenendaels@skynet.be>
Date: Mon, 8 Feb 1999 12:13:21 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4061-1999.02.08-05.14.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

I have a Garmin 12XL GPS an will also set my PC Time which this GPS, I
acquire TAG32 software with work fine whit my GPS, but I can not set my PC
time (the Garmin 12XL are mot a 1PPS GPS) have you a solution.

Roger Groenendaels
Belgium

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

36. [tacgps] RE: Tag32 and GarminXL12

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Mon, 8 Feb 1999 07:13:48 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4066-1999.02.08-06.14.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Roger,

The current version of Tac32 does not allow the PC clock to be set unless
there is a 1PPS signal. This will change in the next version.

Setting the PC clock without a 1PPS will result in the PC clock being late.
In some cases the error may be more than one second. However, enough users
have expressed an interest in having this feature that I will provide for
it.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Roger
Groenendaels
Sent: Monday, February 08, 1999 6:13 AM
To: TAPR Special Interest Group
Subject: [tacgps] Tag32 and GarminXL12

Hi,

I have a Garmin 12XL GPS an will also set my PC Time which this GPS, I
acquire TAG32 software with work fine whit my GPS, but I can not set my PC
time (the Garmin 12XL are mot a 1PPS GPS) have you a solution.

Roger Groenendaels
Belgium

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] RE: Display problems

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Mon, 08 Feb 1999 09:11:01 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4117-1999.02.08-11.11.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Rick,
    The easiest thing for me to do is to set the computer up in a certain
configuration
when I go home at night and see if TAC32 fails overnight. During the day, I'm
using
the computer and it would be hard to track what I was doing at the time of the
failure.
If that technique doesn't work (produce a failure), then I can try setting it up
a certain
way when I go to lunch and see if it fails in the ~45 I take for lunch. Other
than that,
I can just look at it during the day and if it fails, I will do the best I can
to figure out
what I was doing at the time.

73,
Jim W6SC

Jim Johnson
Hewlett-Packard Laboratories
Palo Alto, CA
jjohnson@hpl.hp.com

"Richard M. Hambly" wrote:

> Garren and Jim,
>
> I have been unable to duplicate this problem but I am still trying. I
> consider this to be serious and I hope to be able to track it down. It is
> interesting that it seems to be machine (or configuration) dependent. I
> need as much information as possible about the configurations that have the
> problems and those that don't. Screen savers, operating system version,
> background programs, etc.
>
> Rick
> WB2TNL
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] RE: Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Mon, 8 Feb 1999 10:17:50 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4128-1999.02.08-12.21.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard,

I originaly thought that only one of my computers had the
display problem. It was the 166 MHz pentium with 64 MB of
memory. It runs Win95. I don't know what version. I'll find
out tonight when I get home. After more testing I found that
my other computer had the same problem. It's a 100 MHz
pentium with 40 MB of memory. It also runs Win95. They both
have PCI SVGA display cards. I found that I need to leave the
Azimuth-Elevation Chart up and let it finish drawing the
complete picture of satilite positions before the problems
show up. I bring up the Azimuth-Elevation Chart and reset
the display. After the satilites are charted is when I see
the display problems. There are no screen savers or any other
programs running.

Hope this helps.

Garren Davis

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Saturday, February 06, 1999 5:52 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Garren and Jim,

I have been unable to duplicate this problem but I am still trying. I
consider this to be serious and I hope to be able to track it down. It is
interesting that it seems to be machine (or configuration) dependent. I
need as much information as possible about the configurations that have the
problems and those that don't. Screen savers, operating system version,
background programs, etc.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Jim JJ Johnson
(HPL)
Sent: Friday, February 05, 1999 3:44 PM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Hi Garren and Rick,
   I tried Garren's conditions and I have the same problem. I have had the
"averaging parameters" window up for several days with many windows coming
and going on top of it and I've never had a problem with it. Then I set up
Garren's
situation - Az-El window up and I left it overnight. When I came in this
morning,
the TAC32 and the Az-El windows both had white space where you would
normally
see their data. As I was writing this memo, I noticed that the response to
my
typing
was very slow so I checked the system performance through the task manager
and
found that TAC32 was using 99% of the CPU time and the CPU was being taxed
to its fullest (100%). I stopped TAC32 from the task manager and the CPU
usage
was down to 1% (system idle, essentially). The system I'm using is an HP
Kayak
XA
computer (Pentium II, 250 MHz), 64M RAM, WinNT 4.0/service pack 3. I'll be
glad to modify the BIOS or whatever other testing you'd like me to do to
help
solve
this problem.

73,
Jim W6SC

Garren Davis wrote:

> Richard,
>
> I don't know if this will help but I have a little more
> information about the problem.
> I let the program run overnight with the Azimuth-Elevation Chart
> window open. In the morning I tried to start a DOS window so I
> could issue a MEM command. The DOS window would not start because
> Windows came back with a message that said there was not enough
> memory. I tried to open the 'My Computer' icon but windows came
> back with a message that said there was not enough resources. I
> don't know if this means that TAC32 is eating up memory somehow.
> The other two computers I have don't have this problem so it seems
> like there is a setting in the CMOS setup that is not right. Let
> me know if you want me to try anything to help with this.
>
> Garren
> g_davis@qlc.com
>
> -----Original Message-----
> From: Richard M. Hambly [mailto:rick@cnssys.com]
> Sent: Friday, February 05, 1999 11:37 AM
> To: TAPR Special Interest Group
> Subject: [tacgps] RE: Display problems
>
> Garren,
>
> I am the author of Tac32. The problem you describe has been reported once
> before. I have not been able to determine the cause but it remains an open
> issue and will eventually get fixed I hope. What I really need is a way
to
> duplicate the problem.
>
> Rick
> WB2TNL
>
> Richard M. Hambly
> CNS Systems, Inc.
> (410) 987-7835

> rick@cnssys.com
> http://www.cnssys.com/
>
> -----Original Message-----
> From: bounce-tacgps-5621@lists.tapr.org
> [mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
> Sent: Thursday, February 04, 1999 12:53 PM
> To: TAPR Special Interest Group
> Subject: [tacgps] Display problems
>
> Hi,
>
> I have been using TAC32 registered version 2.00 and seem to have a minor
> problem with the display of the Satellite Azimuth-Elevation Chart. I can
> leave it displayed so it creates a picture of the satellite positions but
> then if a open another window over it then close that window the Satellite
> Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32
> display will also be scrambled. This happens only after the Satellite
> Azimuth-Elevation Chart has been opened for a number of hours. The only
way
> to get things back to normal is to restart TAC32. I have tried this on
three
> different computers and it only happens on one of them. It works on my
> notebook computer with LCD display and 16 Meg of memory. It works on my
100
> MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work
> with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does
> anyone know if I might have a video configuration setting wrong? Has
anyone
> seen this before?
>
> Garren Davis
> g_davis@qlc.com
>
> ---
> You are currently subscribed to tacgps as: RICK@CNSSYS.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: JJOHNSON@HPL.HP.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

--

Jim Johnson
Hewlett-Packard Laboratories
Palo Alto, CA
jjohnson@hpl.hp.com

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

39. [tacgps] TAC32 display problems

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Tue, 09 Feb 1999 09:09:22 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4280-1999.02.09-11.10.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, it happened again, just like the last time. I started up TAC32 and let it
run with
the Az-El display up and running. It ran from 11:30 AM until I left for home
around

5:30 PM yesterday, with no problems. When I came in this morning, both the
TAC32
window and the Az-El window were completely white (no data, just white space)
and
the TAC32 was using 99% of the CPU time. A screen saver took over my pc about
an hour after my last Windows event, so that would have been around 6:30 last
night.

Jim W6SC
jjohnson@hpl.hp.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

40. [tacgps] RE: Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Thu, 11 Feb 1999 09:12:43 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4685-1999.02.11-11.16.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard,

I had thought my notebook computer did not have this problem
but I let it run with the Az-El display for longer than I usually
do and the problem showed up. My two desktop computers run for
less than 12 hours before the problem shows but my notebook had
to run for almost 24 hours before the problem showed. I wonder
if all computers show this problem if you just let them run long
enough.

Garren

-----Original Message-----
From: Garren Davis [mailto:g_davis@qlc.com]
Sent: Monday, February 08, 1999 10:18 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Richard,

I originaly thought that only one of my computers had the
display problem. It was the 166 MHz pentium with 64 MB of
memory. It runs Win95. I don't know what version. I'll find
out tonight when I get home. After more testing I found that
my other computer had the same problem. It's a 100 MHz
pentium with 40 MB of memory. It also runs Win95. They both
have PCI SVGA display cards. I found that I need to leave the
Azimuth-Elevation Chart up and let it finish drawing the
complete picture of satilite positions before the problems
show up. I bring up the Azimuth-Elevation Chart and reset
the display. After the satilites are charted is when I see
the display problems. There are no screen savers or any other
programs running.

Hope this helps.

Garren Davis

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Saturday, February 06, 1999 5:52 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Garren and Jim,

I have been unable to duplicate this problem but I am still trying. I
consider this to be serious and I hope to be able to track it down. It is
interesting that it seems to be machine (or configuration) dependent. I
need as much information as possible about the configurations that have the
problems and those that don't. Screen savers, operating system version,
background programs, etc.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Jim JJ Johnson
(HPL)
Sent: Friday, February 05, 1999 3:44 PM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Hi Garren and Rick,
   I tried Garren's conditions and I have the same problem. I have had the
"averaging parameters" window up for several days with many windows coming
and going on top of it and I've never had a problem with it. Then I set up
Garren's
situation - Az-El window up and I left it overnight. When I came in this
morning,
the TAC32 and the Az-El windows both had white space where you would
normally
see their data. As I was writing this memo, I noticed that the response to
my
typing
was very slow so I checked the system performance through the task manager
and
found that TAC32 was using 99% of the CPU time and the CPU was being taxed
to its fullest (100%). I stopped TAC32 from the task manager and the CPU
usage
was down to 1% (system idle, essentially). The system I'm using is an HP
Kayak
XA
computer (Pentium II, 250 MHz), 64M RAM, WinNT 4.0/service pack 3. I'll be
glad to modify the BIOS or whatever other testing you'd like me to do to
help
solve
this problem.

73,
Jim W6SC

Garren Davis wrote:

> Richard,
>
> I don't know if this will help but I have a little more
> information about the problem.
> I let the program run overnight with the Azimuth-Elevation Chart
> window open. In the morning I tried to start a DOS window so I
> could issue a MEM command. The DOS window would not start because
> Windows came back with a message that said there was not enough
> memory. I tried to open the 'My Computer' icon but windows came
> back with a message that said there was not enough resources. I
> don't know if this means that TAC32 is eating up memory somehow.
> The other two computers I have don't have this problem so it seems
> like there is a setting in the CMOS setup that is not right. Let
> me know if you want me to try anything to help with this.
>
> Garren
> g_davis@qlc.com
>
> -----Original Message-----
> From: Richard M. Hambly [mailto:rick@cnssys.com]
> Sent: Friday, February 05, 1999 11:37 AM
> To: TAPR Special Interest Group
> Subject: [tacgps] RE: Display problems
>
> Garren,
>
> I am the author of Tac32. The problem you describe has been reported once
> before. I have not been able to determine the cause but it remains an open
> issue and will eventually get fixed I hope. What I really need is a way
to
> duplicate the problem.
>
> Rick

> WB2TNL
>
> Richard M. Hambly
> CNS Systems, Inc.
> (410) 987-7835
> rick@cnssys.com
> http://www.cnssys.com/
>
> -----Original Message-----
> From: bounce-tacgps-5621@lists.tapr.org
> [mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Garren Davis
> Sent: Thursday, February 04, 1999 12:53 PM
> To: TAPR Special Interest Group
> Subject: [tacgps] Display problems
>
> Hi,
>
> I have been using TAC32 registered version 2.00 and seem to have a minor
> problem with the display of the Satellite Azimuth-Elevation Chart. I can
> leave it displayed so it creates a picture of the satellite positions but
> then if a open another window over it then close that window the Satellite
> Azimuth-Elevation Chart will be blank. Some of the characters on the TAC32
> display will also be scrambled. This happens only after the Satellite
> Azimuth-Elevation Chart has been opened for a number of hours. The only
way
> to get things back to normal is to restart TAC32. I have tried this on
three
> different computers and it only happens on one of them. It works on my
> notebook computer with LCD display and 16 Meg of memory. It works on my
100
> MHz Pentium with super VGA PCI card and 32 Meg of memory. It does not work
> with my 166 MHz Pentium with super VGA PCI card and 64 Meg of memory. Does
> anyone know if I might have a video configuration setting wrong? Has
anyone
> seen this before?
>
> Garren Davis
> g_davis@qlc.com
>
> ---
> You are currently subscribed to tacgps as: RICK@CNSSYS.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: JJOHNSON@HPL.HP.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

--

Jim Johnson
Hewlett-Packard Laboratories
Palo Alto, CA
jjohnson@hpl.hp.com

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] astroglobal experience

From: Eduardo Jacob <edu@kender.es>
Date: Thu, 11 Feb 1999 22:17:49 -0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-4759-1999.02.11-15.18.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am planning to purchase some 2nd hand equipment. I have been looking at
www.astglobal.com has anybody had (good or bad) experiences with them?

        Regards
        Eduardo/EA2BAJ

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

42. [tacgps] RE: Display problems

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sun, 14 Feb 1999 09:12:29 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-5265-1999.02.14-08.13.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Garen and Jim,

I have been looking into this problem and one other reported bug. The other
bug is fixed. In the process I have done some clean up in the area of the
satellite display. I don't expect much but it would be helpful if you could
download and test the latest release of Tac32 Version 2.0.1 from
http://www.cnssys.com/tac32 and let me know if the problem still exists.
Sooner or later I will find the cause of this problem and correct it!

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

43. [tacgps] display problems

From: Dan Hinz <dan.hinz@ieee.org>
Date: Thu, 11 Feb 1999 21:34:10 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-5301-1999.02.14-12.11.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My display is freezing, but not to the same extent as some of the others

SYSTEM:
HARDWARE:

32MB Ram on a Pentium 90 system
Computer board mfg by Intel (~1994). Premier PCI II
AMI BIOS v1.00.16.AX1
The GPS unit is Garmin 25, powered via TAC2, entire unit is mounted in a

diskdrive bay, powered from the PC.
SCSI card (Adaptec AHA-2940) supports a Syquest drive
Ethernet Network card installed and operating.

SOFTWARE:
Windows 95 (4.00.950)
TAC32 version 2.0.0

Norton Registry tracker is only program running other than TAC
No Screen saver.

CHRONOLOGY:
Start TAC32
using Gamin GPS25 in the 3-D mode (vice 2-D).

Start data logging @ 1 minute intervals, Position format.
Reset the horizon line, leave the AzEl chart open.
I left the Az El chart in the upper right corner of the screen so that
it
only minimally obscured the TAC2 main screen.
Watch that it updates the screen and that I can read info on each of the

satellites if I point to it on the Az-El chart and that it agrees with
main
screen.

At this point experiment hits a time warp. (bad day etc)
I next look at the screen after about 1 day, 15 hours.
The Az-el has updated for some period of time, is not complete for 39+
hours and is frozen. Main display is functioning, mostly.
Time is correct and updating, data logging is functioning, but
buttons are missing their icons, the arrow in the time zone select is a
"6"
status bar says Navigating but red light is not visible or flashing.
Hdop, Vdop PDOp line is partially obscurred.
signal strengths look believable and sort order can be changed.

Close the Az el chart.
Main display continues to function, mostly. some of the buttons have
their
icons, other now do not (changed)
open the Az-El window and it is completely grey. NO picture. only
thing
present is the button to allow resetting the Az-El display.
Shut down TAC2.
Restart TAC2
Everything appears to be functioning properly. The Az-El display now
looks
like what one would expect for 39 hours of data, can query the
information
about each of the satellites.

Also noted that the lock indicator in the averaging screen says locked
since
31Dec69 at 1600 UTC? I believe this is independent of the other display
problem.
73,
Dan

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

44. [tacgps] DGPS over the Net

From: Jeff Vollin <barnie@flash.net>
Date: Sun, 14 Feb 1999 22:24:28 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-5459-1999.02.14-23.25.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For those of you who have not seen it yet, there is an Internet site,

http://www.wsrcc.com/wolfgang/gps/dgps-ip.html

which supplies RTCM differential GPS corrections via the Internet.
I tried this service at my home station here in Tucson and found
it gave about the same accuracy as my local TAPR DGPSIB
box does. I used a Garmin GPS-40 receiver and SA Watch to
measure the accuracy of the fix. I found the RMS error to be
about 4.5 m when averaged over 16 hrs. This same receiver gave
a 4 m RMS zero baseline fix.
  While DGPS over the net is not too useful for roving users
it does have one very interesting use for those of us with our
own reference stations: It can potentially give a much better
reference location for the DGPS ref. sta. given the same averaging
time. I found that most of the time, my GPS-40 had 7 of 8 SV's
giving DGPS values, quite a surprise given the source for the
RTCM is a receiving station in the San Francisco area. If

anyone else uses this service, I would like to hear your results
esp. regarding the elevation accuracy (a value I have not found
accurately for my own station yet).

Jeff Vollin, KC6WFU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

45. [tacgps] RE: Display problems

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Tue, 16 Feb 1999 08:37:51 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-5780-1999.02.16-10.38.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Rick,
    Yes, I'll download it and let it run overnight (my usual test situation) to
see what the status is. Will let you know Wed. morning (2-17).
Thanks,
Jim W6SC

"Richard M. Hambly" wrote:

> Garen and Jim,
>
> I have been looking into this problem and one other reported bug. The other
> bug is fixed. In the process I have done some clean up in the area of the
> satellite display. I don't expect much but it would be helpful if you could
> download and test the latest release of Tac32 Version 2.0.1 from
> http://www.cnssys.com/tac32 and let me know if the problem still exists.
> Sooner or later I will find the cause of this problem and correct it!
>
> Rick
> WB2TNL
>
> Richard M. Hambly
> CNS Systems, Inc.
> (410) 987-7835
> rick@cnssys.com
> http://www.cnssys.com/
>
> ---
> You are currently subscribed to tacgps as: JJOHNSON@HPL.HP.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

46. [tacgps] RE: Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Tue, 16 Feb 1999 08:46:20 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-5782-1999.02.16-10.49.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard,

I downloaded ver 2.0.1 yesterday and started it last night.
This morning it showed no problems. It ran for about 12 hours.
I'll see if it's still ok after work today and also start it
on my other computer. I'll let you know tommorrow if it worked
on both computers.

Garren

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Sunday, February 14, 1999 6:12 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Garen and Jim,

I have been looking into this problem and one other reported bug. The other
bug is fixed. In the process I have done some clean up in the area of the
satellite display. I don't expect much but it would be helpful if you could
download and test the latest release of Tac32 Version 2.0.1 from
http://www.cnssys.com/tac32 and let me know if the problem still exists.
Sooner or later I will find the cause of this problem and correct it!

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

47. [tacgps] TAC32 display update

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Wed, 17 Feb 1999 09:10:44 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6022-1999.02.17-11.11.50--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello all,

    Here are the results of last night's experiment, where I let TAC32
ver. 2.0.1 run all night with the Az-El window up. The behavior is
different than under ver. 2.0.0, but still anomalous. The left side of
the main TAC32 window looks unchanged and is functioning
normally. However, the right side has a couple of problems. First,
the data being displayed is too big for the window and spills over on
the right side and over the bottom (goes out of the viewing areas).
Also, there is a section of the display (right side only) that goes from

gray to white, and this area changes size and shape randomly (so it
seems). It's like a highlighted area that moves around in the section
that tabulates PRN, El, Azm, and Eb/No. The Az-El chart's data
area is gray (not white as in Ver. 2.0.0), but no data is displayed.
The title bar looks OK and the "Reset the Horizon Line" part is
OK too.

Jim W6SC

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

48. [tacgps] RE: Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Wed, 17 Feb 1999 10:17:44 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6032-1999.02.17-12.21.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard,

Well after letting it run for another few hours it failed.
It failed pretty much the same way ver 2.0.0 failed. I
started it on my other computer and let it run over night.
It failed the exact same way as 2.0.0 did.

Garren

-----Original Message-----
From: Garren Davis [mailto:g_davis@qlc.com]
Sent: Tuesday, February 16, 1999 8:46 AM

To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Richard,

I downloaded ver 2.0.1 yesterday and started it last night.
This morning it showed no problems. It ran for about 12 hours.
I'll see if it's still ok after work today and also start it
on my other computer. I'll let you know tommorrow if it worked
on both computers.

Garren

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Sunday, February 14, 1999 6:12 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: Display problems

Garen and Jim,

I have been looking into this problem and one other reported bug. The other
bug is fixed. In the process I have done some clean up in the area of the
satellite display. I don't expect much but it would be helpful if you could
download and test the latest release of Tac32 Version 2.0.1 from
http://www.cnssys.com/tac32 and let me know if the problem still exists.
Sooner or later I will find the cause of this problem and correct it!

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

49. [tacgps] Re: TAC32 display update

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 17 Feb 1999 16:26:29 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6069-1999.02.17-16.28.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What kind of video card are you using? I think you
said once but I forgot...

-----Original Message-----
From: Jim JJ Johnson (HPL) <jjohnson@hpl.hp.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Wednesday, February 17, 1999 11:11 AM
Subject: [tacgps] TAC32 display update

>Hello all,
>
> Here are the results of last night's experiment, where I let TAC32
>ver. 2.0.1 run all night with the Az-El window up

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

50. [tacgps] Re: TAC32 display update

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Wed, 17 Feb 1999 16:10:35 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6083-1999.02.17-18.11.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Steve,

    I'll read it right out of the book - I'm not sure you can even change
the video cards in these HP pc's as they are often part of the
motherboard.

       AGP video controller with 4 MB of RAMBUS video memory.

Now for the display properties from the control panel of the pc:

    Chip type: Cirrus Logic 5465
    Adapter type: Laguna Video Accelerator
    Adapter string: Cirrus Logic VisualMedia(TM) Accelerator

That's about it - thanks.
Jim

Steve Sampson wrote:

> What kind of video card are you using? I think you
> said once but I forgot...
>
> -----Original Message-----
> From: Jim JJ Johnson (HPL) <jjohnson@hpl.hp.com>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Date: Wednesday, February 17, 1999 11:11 AM
> Subject: [tacgps] TAC32 display update
>
> >Hello all,
> >
> >   Here are the results of last night's experiment, where I let TAC32
> >ver. 2.0.1 run all night with the Az-El window up
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

51. [tacgps] TAC32 good news!

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Thu, 18 Feb 1999 08:34:08 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6247-1999.02.18-10.35.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

    Good news for the TAC32 Ver. 2.0.1. A colleague suggested that
I try shutting down Norton Anti-virus and my screen saver. Well, one
of those did the trick but I don't know which one just now. When I
came in this morning, both the TAC32 display and the Az-El display
were perfectly normal. One more night of testing should flush out
which one did the deed.

73,
Jim W6SC

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

52. [tacgps] Display problems

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Thu, 18 Feb 1999 15:56:19 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6278-1999.02.18-14.57.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TO Garren and Jim and anyone who downloaded Tac32 Version 2.0.1,

First, there is a serious bug in V2.0.1 (only)!

Version 2.0.2 is available for testing. It includes a major re-write of the Satellite view graph window to eliminate a number of bugs and improve performance. It also adds a "Sky Hole Line" to compliment the "Horizon Line". For details and to download 2.0.2 go to http://www.cnssys.com/tac32/

Because I cannot duplicate the problems you have reported I am very anxious to hear whether this version corrects the situation.

Thanks for your feedback and patience.

Rick
WB2TNL

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Sunday, February 14, 1999 9:12 AM
To: TAPR Special Interest Group
Subject: RE: [tacgps] RE: Display problems

Garren and Jim,

I have been looking into this problem and one other reported bug. The other bug is fixed. In the process I have done some clean up in the area of the satellite display. I don't expect much but it would be helpful if you could download and test the latest release of Tac32 Version 2.0.1 from http://www.cnssys.com/tac32 and let me know if the problem still exists. Sooner or later I will find the cause of this problem and correct it!

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

53. [tacgps] Spoke too soon - sorry

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Thu, 18 Feb 1999 14:28:55 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6304-1999.02.18-16.50.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello again,

I was thrilled to see the TAC32 working perfectly this morning when I came in to work, but was deflated when, in the middle of the workday, the same failure mode presented itself again (that I had yesterday after my first day of testing Ver. 2.0.1). I haven't had a failure during the middle of the day before, when windows are coming and going at random on my screen. But, when I came back from lunch, there they were, the broken windows similar to those described in yesterday's message. Conditions have not changed on the computer - Norton Anti-virus is still off, as well as the screen saver. So maybe we're back to square one.

Jim W6SC

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

54. [tacgps] Re: Display problems

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Thu, 18 Feb 1999 16:17:03 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6340-1999.02.18-18.18.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rick,

    I'll download it today and get it running for the overnight test.
Hope you've fixed it one way or the other!

Jim W6SC

"Richard M. Hambly" wrote:

> TO Garren and Jim and anyone who downloaded Tac32 Version 2.0.1,
>
> First, there is a serious bug in V2.0.1 (only)!
>
> Version 2.0.2 is available for testing. It includes a major re-write of the
> Satellite view graph window to eliminate a number of bugs and improve
> performance. It also adds a "Sky Hole Line" to compliment the "Horizon
> Line". For details and to download 2.0.2 go to http://www.cnssys.com/tac32/
>
> Because I cannot duplicate the problems you have reported I am very anxious
> to hear whether this version corrects the situation.
>
> Thanks for your feedback and patience.
>
> Rick
> WB2TNL
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

55. [tacgps] Version 2.0 passwords?

From: "Alan Biddle" <APBIDDLE@att.net>
Date: Fri, 19 Feb 1999 00:57:17 -0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6342-1999.02.18-18.58.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

Is version 2.0 a "new" program? I purchased the program a while back, and
haven't received any password messages since 2.x appeared.

Alan

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

56. [tacgps] Re: Version 2.0 passwords?

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Thu, 18 Feb 1999 20:48:22 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6346-1999.02.18-19.47.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:57 AM 2/19/99 -0000, you wrote:
>Hi,
>
>Is version 2.0 a "new" program? I purchased the program a while back, and
>haven't received any password messages since 2.x appeared.

Yes Alan, it is. I just checked, you are still subscribed to the TAC32
list. I'll resend you the password in a separate email.

- Steve
(n7hpr@tapr.org)
(n7hpr@amsat.org)

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

57. [tacgps] Re: Version 2.0 passwords?

From: apbiddle@ateeandtea.not (Alan P. Biddle)
Date: Fri, 19 Feb 1999 02:04:37 GMT
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6347-1999.02.18-20.05.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve,

Got the password mail. I have been gone for several extended periods
of time lately, and perhaps my ISP ran out of space for my mail
storage. Many thanks!

__
Alan
WA4SCA

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

58. [tacgps] RE: Display problems

From: Garren Davis <g_davis@qlc.com>
Date: Fri, 19 Feb 1999 08:39:25 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6545-1999.02.19-10.43.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard,

I downloaded 2.0.2 and ran it over night. Still the same
problem. It was a little different in that it did not
screw up the main display. Earlier versions would scatter
things on the main display along with blanking out the
Az-El chart when a window was opened on top of it. Ver 2.0.2
just blanked out the Az-El display. The main display looked
ok. I could have missed something when looking at the main
display. I'll be gone all weekend so I will look more closely
when I get back to make sure the main display is not messed
up like it was with the earlier versions.

Garren

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Thursday, February 18, 1999 12:56 PM
To: TAPR Special Interest Group
Subject: [tacgps] Display problems

TO Garren and Jim and anyone who downloaded Tac32 Version 2.0.1,

First, there is a serious bug in V2.0.1 (only)!

Version 2.0.2 is available for testing. It includes a major re-write of the
Satellite view graph window to eliminate a number of bugs and improve
performance. It also adds a "Sky Hole Line" to compliment the "Horizon
Line". For details and to download 2.0.2 go to http://www.cnssys.com/tac32/

Because I cannot duplicate the problems you have reported I am very anxious
to hear whether this version corrects the situation.

Thanks for your feedback and patience.

Rick
WB2TNL

-----Original Message-----
From: Richard M. Hambly [mailto:rick@cnssys.com]
Sent: Sunday, February 14, 1999 9:12 AM
To: TAPR Special Interest Group
Subject: RE: [tacgps] RE: Display problems

Garren and Jim,

I have been looking into this problem and one other reported bug. The other bug is fixed. In the process I have done some clean up in the area of the satellite display. I don't expect much but it would be helpful if you could download and test the latest release of Tac32 Version 2.0.1 from http://www.cnssys.com/tac32 and let me know if the problem still exists. Sooner or later I will find the cause of this problem and correct it!

Rick
WB2TNL

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com
http://www.cnssys.com/

You are currently subscribed to tacgps as: G_DAVIS@QLC.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

59. [tacgps] TAC32/Mfc42.dll Problem

From: Kirk Alexander <kirk@Princeton.EDU>
Date: Sat, 20 Feb 1999 17:14:39 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6828-1999.02.20-16.16.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello!
I just joined the list and just purchased a TAC-2 with TAC32 software. It all works great...and the 2.0.2 seems to be running on my Windows 95 laptop with no display problems. The one thing I have encountered is that the Mfc42.dll (version 6.00.8267.0) has rendered my copy of Delorme's TOPO USA unusable (they use version 4.21.7303). The problem is that certain fields and graphics in their user-interface simply don't display. Is there any hope that there might be a single version that would work with both? It took me awhile to track this down!
Kirk

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

60. [tacgps] RE: TAC32/Mfc42.dll Problem

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sat, 20 Feb 1999 17:19:32 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6830-1999.02.20-16.21.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kirk,

No but there is a possible solution. Put a copy of the old version of Mfc42.dll in the directory containing DeLorme's executable. Programs always search there for dll files first.

Rick

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Kirk Alexander
Sent: Saturday, February 20, 1999 5:15 PM
To: TAPR Special Interest Group
Subject: [tacgps] TAC32/Mfc42.dll Problem

Hello!
   I just joined the list and just purchased a TAC-2 with TAC32
software. It all works great...and the 2.0.2 seems to be running on my
Windows 95 laptop with no display problems. The one thing I have
encountered is that the Mfc42.dll (version 6.00.8267.0) has rendered my
copy of Delorme's TOPO USA unusable (they use version 4.21.7303).
The problem is that certain fields and graphics in their user-interface
simply don't display. Is there any hope that there might be a single
version that would work with both? It took me awhile to track this
down!
Kirk

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

61. [tacgps] display problems

From: Dan Hinz <dan.hinz@ieee.org>
Date: Sat, 20 Feb 1999 14:25:41 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6833-1999.02.20-16.36.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I loaded version 2.0.2. It is better than 2.0.1. and 2.0.0.

I ran the program overnight and the Az-el display was frozen in the
morning. The main program display appeared to be functioning properly.
I closed the Az-el display and reopened it. it was completely gray
except for the reset horizon button and text.

I restarted the program and started over. I checked the az-el display
at 30 minutes and it was fine.
I checked again at just over 45 minutes (seconds past) and the problem
was "beginning." When I pointed to one of the satellites in the az-el
display, it would show the information. When I moved the pointer off of
the satellite, the data was gone but a gray box remained where the data
was. I pointed to several other satellites with the same results. I
could repoint to the satellites and the data would be redisplayed. At
the end the display had numerous gray boxes. I closed the az-el window
and reopened it, it was completely gray.

Hope this helps in the troubleshooting.
73,
Dan, W6LSN

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

62. [tacgps] Office closed this week

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 21 Feb 1999 13:54:50 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-6990-1999.02.21-12.53.36--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Due to a death in the Jones family, the TAPR office will be closed for the
week.

Greg Jones, WD5IVD
President TAPR

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

63. [tacgps] RE: Office closed this week

From: Jerome Lacap <lacapj@skyinet.net>
Date: Mon, 22 Feb 1999 07:46:19 +0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-7034-1999.02.21-17.58.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

We would like to extend our sincere condolences.

DU1BGE
Philippines

From: Steven R. Bible[SMTP:srbible@gate.net]
Sent: Monday, February 22, 1999 2:54 AM
To: TAPR Special Interest Group
Subject: [tacgps] Office closed this week

Due to a death in the Jones family, the TAPR office will be closed for the
week.

Greg Jones, WD5IVD
President TAPR

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: LACAPJ@SKYINET.NET
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

64. [tacgps] Ionospheric Probe with DGPS?

From: Jeff Vollin <barnie@flash.net>
Date: Sun, 28 Feb 1999 15:31:33 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-8207-1999.02.28-16.33.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Now that Wolfgang Rupprecht is forwarding RTCM corrections
via tha net, I was wondering if I could subtract the correction from
my DGPS Ref Station from the Pt. Blunt Coast Guard station (for
each SV in common view individually, of course) and get
something that would be like the ionspheric-induced error (plus
receiver noise, multipath, etc.). Has anyone tried this? Any spiffy
software like SA Watch to monitor the results? Does anybody
have any software to translate the RTCM data into human-readable
form? If nothing else, this might prove to be a useful diagnostic
tool for antennas, multipath errors, etc.
  Does anybody know how much of the SA error is due to
pseudorange error and how much is due to ephemeris errors? Or
is SA strictly limited to pseudorange?

Jeff Vollin, KC6WFU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

March 1999

Original source file: tacgps.9903
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9903

1. [tacgps] Ionospheric Probe with DGPS?

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Mon, 01 Mar 1999 09:36:55 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-8313-1999.03.01-08.37.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Wolfgang has posted software that decodes the RTCM messages
on his website. There is source as well as unix and
Windows executables.
See

http://www.wsrcc.com/wolfgang/gps/dgps-ip.html
--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)
http://www.princeton.edu/~kirk

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---

2. [tacgps] Re: Ionospheric Probe with DGPS?

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Mon, 01 Mar 1999 17:53:06 +1100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-8475-1999.03.02-01.20.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think the RTCM corrections would give you the delay induced by the
atmosphere, but not the loss introduced by the atmosphere. The two should
be correlated in some way but I am not sure how.

>From my understanding, there is no change in the signal strength with SA,
providing you can track the signal. From a satelites relative position it
is possible to make an assumption on the recieved power. By comparing that
to the actual recieved power it is possible to get an approximation for
the atmospheric losses over time, IMHO.

To do this you would need to generate a model of your antenna in it's
exact location. Basically you would just need to log the data for a large
timeperiod with satelite positions and recieved powers, and filter. This
will generate a resonble model of the reception of your antenna.

Then you can use this to apply corrections to recieved signals, comparing
these to the free space computed values to work out the loss of the
atmosphere at various frequencies. I think you would be able to high
concentrations of H2O in the air (Rain :-) as well as dry periods. This
might even be better at predicting rain than the weather people. 3 feet of
Snow would create a very high attenuation of teh GPS signal and could be
detected too...

I think the best software to do this would be something like MATLAB or
Excel (I have been looking for an excuse to try Excel Visual Basic). The
first trick is to create a model of your antenna gain vs. position.

These are just my random thoughts on the matter....

Darryl VK2TDS

>

>
>   Now that Wolfgang Rupprecht is forwarding RTCM corrections
> via tha net, I was wondering if I could subtract the correction from
> my DGPS Ref Station from the Pt. Blunt Coast Guard station (for
> each SV in common view individually, of course) and get
> something that would be like the ionspheric-induced error (plus
> receiver noise, multipath, etc.). Has anyone tried this? Any spiffy
> software like SA Watch to monitor the results? Does anybody
> have any software to translate the RTCM data into human-readable
> form? If nothing else, this might prove to be a useful diagnostic
> tool for antennas, multipath errors, etc.
>   Does anybody know how much of the SA error is due to
> pseudorange error and how much is due to ephemeris errors? Or
> is SA strictly limited to pseudorange?
>
> Jeff Vollin, KC6WFU
>
> ---
>
> END OF DIGEST
>
> ---
> You are currently subscribed to tacgps as: VK2TDS@OZEMAIL.COM.AU
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] GPS W1K problems already hit!

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Tue, 09 Mar 1999 05:01:27 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-9762-1999.03.08-23.08.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I got two messages from my professional colleagues today that may
be of interest.

As you know, the time broadcast by GPS consists of a 10-bit "Week
Number" plus a 20-bit counter for seconds within the week. The
10-bit week counter has a maximum value of 1023 and the GPS era
is reconed in weeks from Jan.6,1980. We hit week 1023 this coming
August and the counter will roll-over to zero, causing a Y2K-like
GPS problem. Most receiver manufacturers have certified that their
receivers won't barf in August.

But just today I got messages that two different software packages
using GPS data failed when the week rolled-over to 1000. It seems
that the software only allowed for a 3-digit week counter (in good
old Fortrash, Format I3) ;<}

Needless to say, there were some red faces!

Personally, I solved the millenium Y-to-K problem with a global
edit/replace. I'll have no problems on Januark 1st!

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] GPS Time Stamp

From: Nick Mohr <nmohr1@iastate.edu>
Date: Tue, 09 Mar 1999 22:16:57 CST
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-9947-1999.03.09-22.18.59--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello!

I am a student at Iowa State University, and I have a rather unique
project (or maybe it's not) for which I need very precise time stamps on

data events. We need to put a time stamp on a NIM pulse (very short
duration -.75V pulse) that comes out of a cosmic ray detector that is
accurate to +/-50 ns so that it is synchronized at sites several hundred
miles away. We figured that we would take the 1 PPS signal from an
Oncore UT+ unit and use that and the event pulse to start and stop a
scalar that is counting ticks of an oscillator (100MHz). We really
aren't sure how to do this, though, and that's when I found the TAC
info. Is this a feasible application for this device? How might we put
a NIM pulse into some sort of board with the GPS receiver to output a
number to a PC that we could use? I just need ideas, so if anyone has
any thoughts, PLEASE let me know ASAP!

Nick Mohr
Iowa State University
mohr@iastate.edu

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: GPS Time Stamp

From: Tom Van Baak <tvb@veritas.com>
Date: Tue, 09 Mar 1999 21:53:43 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-9963-1999.03.10-00.01.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Nick Mohr wrote:
>
> Hello!
>
> I am a student at Iowa State University, and I have a rather unique
> project (or maybe it's not) for which I need very precise time stamps on
> data events. We need to put a time stamp on a NIM pulse (very short
> duration -.75V pulse) that comes out of a cosmic ray detector that is
> accurate to +/-50 ns so that it is synchronized at sites several hundred
> miles away. We figured that we would take the 1 PPS signal from an
> Oncore UT+ unit and use that and the event pulse to start and stop a
> scalar that is counting ticks of an oscillator (100MHz). We really
> aren't sure how to do this, though, and that's when I found the TAC
> info. Is this a feasible application for this device? How might we put
> a NIM pulse into some sort of board with the GPS receiver to output a
> number to a PC that we could use? I just need ideas, so if anyone has
> any thoughts, PLEASE let me know ASAP!

Nick,

You're very close. If you needed accuracies of +/-100 ns
or maybe +/- 200 ns then you'd be all set: a UT+ and a
5 or 10 MHz clock is all you need. This is because the
sum of GPS signal and UT+ jitter is on the order of a
couple 100 ns. But if you really need accuracies less
than 100 ns, I think you need to invest in a disciplined
GPS 1 PPS source. See http://www.rt66.com/~shera/

/tvb

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] TAC-2 for SK8, no output PPS?

From: User PgmPatrick MacKeown <pgm@ns0.help-desk.co.uk>
Date: Thu, 11 Mar 1999 00:17:29 +0000 (GMT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10100-1999.03.10-18.19.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi there folks
 We plain sailed through the components, missing out R6, configuring
for Trimble SK8 going straight onto R9, we cut the board using Dr Tom's
instuctions.

 We think we've got all the bits in all the right places, and have checked
the voltages which all measure as they should the LED test was satisfactory
too, and yet, we are unable to determine whether the pulse which goes in
to the cicuit, comes out again. We have an ocsilloscope and can see the
pulse from the GPS but when all is connected together. Nothing. (We've

tested the serial connections and the serial port)

Does anybody have any trouble shooting suggestions? Particularly ones which
involve outputs which can be measured. Perhaps we can make some kind of step
by step progress? If there is nothing. Maybe we should start again?

Patrick Mackeown.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] Re: TAC-2 for SK8, no output PPS?

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Thu, 11 Mar 1999 05:37:53 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10153-1999.03.10-23.41.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

User PgmPatrick MacKeown wrote:
>
> Hi there folks
> We plain sailed through the components, missing out R6, configuring
> for Trimble SK8 going straight onto R9, we cut the board using Dr Tom's
> instuctions.

I never had my hands on an SK-8 to try it. The "guinea pig" for the
SK-8 was Lyle Johnson in Tucson.

As I recall, the SK-8 has a narrow (like 10 usec) pulse, which is why
the 7555 one-shot was available as an option. The "nude" SK-8 pulse
will be too short to be seen on the LED. Use a scope and make see if
the pulse is there at the receiver output. Then separately test the
7555 and make sure it works.

Sorry I can't be more help -- Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: TAC-2 for SK8, no output PPS?

From: Lyle Johnson <lylej@azstarnet.com>
Date: Wed, 10 Mar 1999 22:31:01 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10154-1999.03.10-23.42.39--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I never had my hands on an SK-8 to try it. The "guinea pig" for the
>SK-8 was Lyle Johnson in Tucson.
>
>As I recall, the SK-8 has a narrow (like 10 usec) pulse, which is why
>the 7555 one-shot was available as an option.

yes.

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Accuracy of TAC with GPS Dropout

From: "Leighton Eugene Young" <gyoung0707@aol.com>
Date: Sun, 14 Mar 1999 20:11:33
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10705-1999.03.14-20.13.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have need for a clock with 1pps output that will remain accurate to
within 500 ns (and for 20 minutes)with UTC under GPS dropout for as much 20
minutes. The application is on a small rocket that will be taken to 80,000
ft. underneath a helium filled balloon and then launched almost vertically.
The rocket will burn for approx. 20 secs. coast to appogee and return
safely to earth after parachute deployment. The thrust level will be
approx. 10g. Assuming the TAC and GPS are not damaged by environmental
conditions i.e. thrust, vibration, vacuum and temperature, 1.) what shoud
be be the accuracy of the TAC over a 20 minute period after beginning of

thrust? Will the crystal oscillator shift abruptly after GPS dropout or
have a slow rate of drift? (assume slow temperature drift over the period)
3.)If the GPS regains lock , will the crystal osc. regain sync with the
GPS?

Your help will be much appreciated.

Thanks, Gene

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] strange garmin 12XL problem

From: Sam Smith <sam.smith@ee.gatech.edu>
Date: Mon, 15 Mar 1999 10:09:20 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10791-1999.03.15-10.27.05--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I got my dgps kit working over the weekend, first via serial cable to my
gps, then via radio, but I noticed a wierd problem.

I have a Garmin 12XL, with a pico packet (adrdisp off). If I set the
garmin interface to RTCM/NONE it works great. If I change it to
RTCM/NMEA (so I can use it as a tracker) it complains there is no RTCM
input. Of course the garmin has the extra settings for tuning their own
DGPS receiver. Could that be affecting it somehow?

Has anyone else gotten this combination to work?
--
Sam Smith kf4pwh
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] GPS data, acquisition, environmental effects

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 15 Mar 1999 17:33:34 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10875-1999.03.15-16.35.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Some time ago, someone on the list wanted to know about atmosperic effects.
 Here's a paper on some ionosperic investigations.

    http://earth.agu.org/revgeophys/yunck00/yunck00.html

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Re: Accuracy of TAC with GPS Dropout

From: clark@tomcat.gsfc.nasa.gov
Date: Tue, 16 Mar 99 00:50:57 UTC
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-10889-1999.03.15-19.01.03--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This one will be tough. You are asking for a free-running
oscillator capable of holding 500 nsec over 1000+ sec, i.e.
one which runs at a rate accurate at 5*10e-10.

As an example of how my TAC holds time after the antenna is
disconnected, see the p;lot on my ftp site at
 ftp://aleph.gsfc.nasa.gov/GPS/totally.accurate.clock/tac-1sec.gif
where this particular Motorola ONCOR E showed a drift rate of

300 nsec/minute -- a factor ~10 worsthan your requirement.

You can glean an idea of the clock "smoothness" and
"predictability" by looking at the Allan Variance for differemt
oscillators. Again see my FTP site for
 ftp://aleph.gsfc.nasa.gov/GPS/tapr_dcc/allanv.gif
for some samples.

I apologize for the typing errors & spelling problems. I'm
using a brain-damaged TELNET which lacks a backspace character
responding from Alaska!

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] DGPS transmitter for Raleigh, NC area

From: bob morris <rmorris@pobox.com>
Date: Mon, 15 Mar 1999 22:04:58 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10906-1999.03.15-21.06.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am looking for someone in the Raleigh, NC area who might be interested
in cooperating
on construction of a DGPS transmitting station -- preferably on 2M band.

I was wondering if there is any coordination regarding the usage of
amateur radio
stations transmitting DGPS? Are there preferred frequencies? Maybe
these questions have been
answered before -- I am newcomer to GPS & DGPS so please pardon me if
these are obvious
questions.   I took a quick look thru the archives, but did not see
anything that seemed to relate.

I am interested in being able to get DGPS corrections in the field for
more accurate mapping.

Thanks, Bob, N4ACR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: Shodan <shodan@vail.net>
Date: Mon, 15 Mar 1999 21:10:43 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10907-1999.03.15-21.12.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you find out anything, or have details about the construction on a
station, please forward it to me. Would like to use the DGPS for our Search
and Rescue efforts.
Thanks
Darrell
darrellc@flash.net

bob morris wrote:

> I am looking for someone in the Raleigh, NC area who might be interested
> in cooperating
> on construction of a DGPS transmitting station -- preferably on 2M band.
>
> I was wondering if there is any coordination regarding the usage of
> amateur radio
> stations transmitting DGPS? Are there preferred frequencies? Maybe
> these questions have been
> answered before -- I am newcomer to GPS & DGPS so please pardon me if
> these are obvious
> questions.   I took a quick look thru the archives, but did not see
> anything that seemed to relate.
>
> I am interested in being able to get DGPS corrections in the field for
> more accurate mapping.

>
> Thanks, Bob, N4ACR
>
> ---
> You are currently subscribed to tacgps as: DARRELLC@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: "Steven R. Bible" <n7hpr@tapr.org>
Date: Mon, 15 Mar 1999 22:42:54 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10911-1999.03.15-21.45.03--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:04 PM 3/15/99 -0500, you wrote:
>I am looking for someone in the Raleigh, NC area who might be interested
>in cooperating
>on construction of a DGPS transmitting station -- preferably on 2M band.
>
>I was wondering if there is any coordination regarding the usage of
>amateur radio
>stations transmitting DGPS? Are there preferred frequencies? Maybe
>these questions have been
>answered before -- I am newcomer to GPS & DGPS so please pardon me if
>these are obvious
>questions.   I took a quick look thru the archives, but did not see
>anything that seemed to relate.

Bob, there are no hard and fast rules. We have advocated using the APRS
frequency of 144.390 MHz and send the RTCM corrections every 10 seconds if
possible. Every 15 seconds works. See

    http://www.tapr.org/tapr/html/Fdgps.html

and take a look at the performance pages to see what effect sending
corrections at different rates has.

You can, of course, use any 2-meter or even 70-cm frequency. Simply
coordinate it for your local area, as mentioned.

Hopefully others that have set up a system will chime in and let you know
what they did.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Mon, 15 Mar 1999 22:37:57 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10910-1999.03.15-21.45.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:10 PM 3/15/99 -0600, you wrote:
>If you find out anything, or have details about the construction on a
>station, please forward it to me. Would like to use the DGPS for our Search
>and Rescue efforts.
>Thanks
>Darrell
>darrellc@flash.net

Darrell, take a look at

http://www.tapr.org/tapr/html/Fdgps.html

I'd be glad to answer any questions you have on the kit.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: "Ray J. Vaughan" <ray@rayvaughan.com>
Date: Mon, 15 Mar 1999 22:50:31 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10913-1999.03.15-21.56.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:04 PM 3/15/99 -0500, you wrote:
>I am looking for someone in the Raleigh, NC area who might be interested
>in cooperating
>on construction of a DGPS transmitting station -- preferably on 2M band.
>
>I was wondering if there is any coordination regarding the usage of
>amateur radio
>stations transmitting DGPS? Are there preferred frequencies? Maybe
>these questions have been
>answered before -- I am newcomer to GPS & DGPS so please pardon me if
>these are obvious
>questions.   I took a quick look thru the archives, but did not see
>anything that seemed to relate.
>
>I am interested in being able to get DGPS corrections in the field for
>more accurate mapping.

Ditto for here in Miami, FL.

I have the DGPS (Magellan) unit, the TX, and the will to do the work. I
need a site here in the Miami/Ft. Laud area. This one would be on UHF.
That way, a 2m transmission won't desense the DGPS signal.

Anyone who wants one here, let me know... let's get together to chat about it.

Can anyone speak from experience?   Any pointers?

Thanks

Ray, KD4BBM

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] Re: strange garmin 12XL problem

From: "Don Robinson" <don.robinson@clear.net.nz>
Date: Tue, 16 Mar 1999 16:48:55 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10914-1999.03.15-22.05.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have a 12XL and Pico packet working OK here. Built up the TAPR kit for my
Base Station. I use RTCM/NMEA - never tried it with RTCM/NONE.

If all else fails let me know and I will try and help if I can.

Don Robinson ZL2QX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 15 Mar 1999 22:15:06 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10916-1999.03.15-22.19.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What we really need is a source of cheap UHF receivers that
can be tapped into at the discriminator, and a good 4800 baud
transmit modem for a central site.

Something as simple as a pager device, with a modem output.

Anyone seen any good 4800 baud modem designs on a PIC? :-)
Anyone seen a source of *new* receivers that are OEM at less than
$30 apiece?

Steve

-----Original Message-----

>I have the DGPS (Magellan) unit, the TX, and it will to do the work. I
>need a site here in the Miami/Ft. Laud area. This one would be on UHF.
>That way, a 2m transmission won't desense the DGPS signal.
>
>Anyone who wants one here, let me know... let's get together to chat about
it.
>
>Can anyone speak from experience?   Any pointers?

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: "Ray J. Vaughan" <ray@rayvaughan.com>
Date: Tue, 16 Mar 1999 00:02:52 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10920-1999.03.15-23.08.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:15 PM 3/15/99 -0600, you wrote:
>What we really need is a source of cheap UHF receivers that
>can be tapped into at the discriminator, and a good 4800 baud
>transmit modem for a central site.
>
>Something as simple as a pager device, with a modem output.
>
>Anyone seen any good 4800 baud modem designs on a PIC? :-)
>Anyone seen a source of *new* receivers that are OEM at less than
>$30 apiece?

I had hoped we could get around the 4800 bps requirement somehow. Maybe
1200 or 300 over the air with a PIC buffering and sending to the GPS at
4800 maybe? The actual data rate from the DGPS station could be carried at
300 with room to spare.

I fear more than 1200 bps over the air will rule out a lot of options.
This has got to be dirt cheap to mass produce for it to catch on.   If we
get too expensive, it would cheaper to just buy the DGPS receivers.

I think some GPSs might be able to do other speeds in. But I don't think
mine can. How about Tripmates? Do they even undertand DGPS?

Trigger any ideas?

Ray, KD4BBM

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Tue, 16 Mar 1999 07:02:12 -0500 (EST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

Message-ID: <LYR6754-10954-1999.03.16-06.30.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> At 10:04 PM 3/15/99 -0500, you wrote:
> >I am looking for someone in the Raleigh, NC area who might be interested
> >in cooperating
> >on construction of a DGPS transmitting station -- preferably on 2M band.
> >
> >I was wondering if there is any coordination regarding the usage of
> >amateur radio
> >stations transmitting DGPS? Are there preferred frequencies? Maybe
> >these questions have been
> >answered before -- I am newcomer to GPS & DGPS so please pardon me if
> >these are obvious
> >questions.   I took a quick look thru the archives, but did not see
> >anything that seemed to relate.
>
>
> Bob, there are no hard and fast rules. We have advocated using the APRS
> frequency of 144.390 MHz and send the RTCM corrections every 10 seconds if
> possible. Every 15 seconds works. See
>
>   http://www.tapr.org/tapr/html/Fdgps.html
>
> and take a look at the performance pages to see what effect sending
> corrections at different rates has.
>
> You can, of course, use any 2-meter or even 70-cm frequency. Simply
> coordinate it for your local area, as mentioned.

I'm in Newtown, CT, a town of about 60 square miles of hilly terrain.
I've been thinking of setting up a DGPS reference station on 6 meters
because I'm concerned about not being able to cover all of Newtown
from a single site, otherwise. (My application is the generation of
accurate maps for our ambulance corps.)

Any comments?

Ken

>
> Hopefully others that have set up a system will chime in and let you know
> what they did.
>
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>   n7hpr@amsat.org
>
>
> ---
> You are currently subscribed to tacgps as: LERMAN@LERMAN.NAI.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: Sam Smith <sam.smith@ee.gatech.edu>
Date: Tue, 16 Mar 1999 08:22:57 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10959-1999.03.16-07.25.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm setting one up for the Georgia Orienteering Club to use, but we're
going to move it from race to race, and it will probably just be on
during an event. We have orienteering maps over most of the piedmont of
GA.

--
Sam Smith KF4PWH
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] DGPS system at Dayton?????

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Tue, 16 Mar 1999 09:34:18 -0500 (EST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: TAPR APRS Special Interest Group <aprssig@tapr.org>
Message-ID: <LYR6754-10963-1999.03.16-08.36.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think we need a DGPS system at Dayton. I am currently digitizing a map
good to the nearest parking space. Is someone going to set up a
transmitter?

de WB4APR, Bob

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

24. [tacgps] TAC32 Display problems fixed

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Tue, 16 Mar 1999 09:38:51 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10965-1999.03.16-08.41.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

To everyone who has been experiencing problems with Tac32 when leaving the
Satellite View Chart open for an extended period of time, similar to Dan's
problem (see below), Version 2.0.6 is now available at
http://www.cnssys.com/tac32. Release notes are also on that page. Please
try this version and let me know what happens - I really need the feedback.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Dan Hinz
Sent: Saturday, February 20, 1999 5:26 PM
To: TAPR Special Interest Group
Subject: [tacgps] display problems

I loaded version 2.0.2. It is better than 2.0.1. and 2.0.0.

I ran the program overnight and the Az-el display was frozen in the
morning. The main program display appeared to be functioning properly.
I closed the Az-el display and reopened it. it was completely gray
except for the reset horizon button and text.

I restarted the program and started over. I checked the az-el display
at 30 minutes and it was fine.
I checked again at just over 45 minutes (seconds past) and the problem
was "beginning." When I pointed to one of the satellites in the az-el
display, it would show the information. When I moved the pointer off of
the satellite, the data was gone but a gray box remained where the data
was. I pointed to several other satellites with the same results. I
could repoint to the satellites and the data would be redisplayed. At
the end the display had numerous gray boxes. I closed the az-el window
and reopened it, it was completely gray.

Hope this helps in the troubleshooting.
73,
Dan, W6LSN

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] "Differential GPS Using Amateur Radio"

From: "Horzepa, Stan" <Stan_Horzepa@adc.com>
Date: Tue, 16 Mar 1999 08:52:04 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-10970-1999.03.16-08.55.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

FYI, the current issue of "The ARRL Web Extra" 'zine, which is accessible from the ARRL Members Only Web page (http://www.arrl.org/members/), features an article titled "Differential GPS Using Amateur Radio" by Robert Gonsett, W6VR.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] New to GPS with questions

From: Ted Sarah <w8tts@gwis.com>
Date: Tue, 16 Mar 1999 23:26:26 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11031-1999.03.16-17.28.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all,

Being new to GPS/APRS I have some getting started questions. I have gotten from TAPR the following: Garmin GPS-25
Garmin GA-27 antenna
GPS-20/25 Interface kit

Now the questions:

1. How long will the GPS-25 with the GPS-20/25 run on a good quality 9v battery?
2. Can someone give me the pinning for the DB9 from the GPS-20/25?

I'm going to give the TAC-32 a shot. Any comments?

73 - Ted - W8TTS

e-mail: w8tts@gwis.com or w8tts@qsl.net
home page: http://w3.gwis.com/~tsarah/ham.htm

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] Re: strange garmin 12XL problem

From: Jim King <king@sstar.com>
Date: Tue, 16 Mar 1999 18:47:13 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11038-1999.03.16-18.49.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
>Subject: strange garmin 12XL problem
>From: Sam Smith <sam.smith@ee.gatech.edu>
>Date: Mon, 15 Mar 1999 10:09:20 -0500
>X-Message-Number: 1
>
>I got my dgps kit working over the weekend, first via serial cable to my
>gps, then via radio, but I noticed a wierd problem.
>
>I have a Garmin 12XL, with a pico packet (adrdisp off). If I set the
>garmin interface to RTCM/NONE it works great. If I change it to
>RTCM/NMEA (so I can use it as a tracker) it complains there is no RTCM

>input. Of course the garmin has the extra settings for tuning their own
>DGPS receiver. Could that be affecting it somehow?

Did you check the baud rate? On my Garmin III I usually set it to 9600 bps
when using RTCM/None; when I recently changed it to RTCM/NMEA it changed
the rate to 4800 bps and wouldn't let me change it back to 9600.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Re: strange garmin 12XL problem

From: Sam Smith <sam.smith@ee.gatech.edu>
Date: Wed, 17 Mar 1999 07:59:33 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11112-1999.03.17-07.01.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If anyone is interested I fixed this problem, so the Garmin 12XL and the
pico packet and the DGPS input, etc all seem to be working together now.
I had flow ON so that when the gps sent out it's strings it stopped the
corrections from coming in. Or at least I think that's what happened.
Sometimes I feel like I'm just barely keeping my nose above water...

Anyway thanks for all the help I got.

I also figured out how to make WinAPRS send out the corrections,
although that means it becomes just a "listener" and only transmits the
dgps packets and the ID every ten minutes.
--
Sam Smith KF4PWH
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: Shodan <shodan@vail.net>
Date: Wed, 17 Mar 1999 20:33:40 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11215-1999.03.17-20.35.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I d/l the pdf file, but was unable to read the file. I would like to use the
DGPS with a KAM 3+ or a pico packet modem. I will keep looking. Thanks
Darrell

Steven R. Bible wrote:

> At 09:10 PM 3/15/99 -0600, you wrote:
> >If you find out anything, or have details about the construction on a
> >station, please forward it to me. Would like to use the DGPS for our Search
> >and Rescue efforts.
> >Thanks
> >Darrell
> >darrellc@flash.net
>
> Darrell, take a look at
>
>   http://www.tapr.org/tapr/html/Fdgps.html
>
> I'd be glad to answer any questions you have on the kit.
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>   n7hpr@amsat.org
>
> ---
> You are currently subscribed to tacgps as: DARRELLC@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] New to GPS with questions

From: Ted Sarah <w8tts@gwis.com>
Date: Thu, 18 Mar 1999 17:33:56 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11284-1999.03.18-11.36.26--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all,

Being new to GPS/APRS I have some getting started questions. I have
gotten from TAPR the following: Garmin GPS-25
Garmin GA-27 antenna
GPS-20/25 Interface kit

Now the questions:

1. How long will the GPS-25 with the GPS-20/25 run on a good
quality 9v battery?
2. Can someone give me the pinning for the DB9 from the
GPS-20/25?

I'm going to give the TAC-32 a shot. Any comments?

73 - Ted - W8TTS

e-mail: w8tts@gwis.com or w8tts@qsl.net
home page: http://w3.gwis.com/~tsarah/ham.htm

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Thu, 18 Mar 1999 16:20:34 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11300-1999.03.18-15.22.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:33 PM 3/17/99 -0600, you wrote:
>I d/l the pdf file, but was unable to read the file. I would like to use the
>DGPS with a KAM 3+ or a pico packet modem. I will keep looking. Thanks
>Darrell
>
>Steven R. Bible wrote:
>
>> At 09:10 PM 3/15/99 -0600, you wrote:
>> >If you find out anything, or have details about the construction on a
>> >station, please forward it to me. Would like to use the DGPS for our
Search
>> >and Rescue efforts.
>> >Thanks
>> >Darrell
>> >darrellc@flash.net

Darrell, make sure you are using Acrobat Reader Version 3.0.

- Steve, N7HPR
n7hpr@tapr.org
n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: Jeff Vollin <barnie@flash.net>
Date: Thu, 18 Mar 1999 20:50:04 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11323-1999.03.18-21.52.28--lyris.tacgps#tapr.org@lists.tapr.org>

Rendered body type: text/plain

I have been operating a TAPR differential Reference Station here in Tucson for
about a year now. I transmit the beacon on 144.39 (APRS here) once
every 10 seconds with UNPROTO set to "RTCM". This allows
the dual port PicoPacket to send the corrections to the GPS
and send the NMEA from the GPS out over the air. My rover
is a Picopacket, Yaesu FT470 and a Garmin GPS-40. This
system works great most of the time. I can tell which side
of the highway I am on as I am driving to work.

The one thing I have found is that it is quite common
for the GPS to lose the RTCM input because just one
corrupt bit in the incoming data stream will prevent the
whole packet from coming through. With a packet once
every 10 seconds, if I miss two, the GPS will revert to standard
rather than differential GPS. I have also found the Picopacket
puts out a great deal of QRM which exacerbates the problem.
I can easily hear the packets by ear when I have gone over
about 20 miles from the base, but the packets will not make
it through to the GPS. This system could benefit greatly
from some foward error correction. Since the current
system is unconnected, there are no retries and even a
modest BER will stop the link.

Additional info on the base: I live in the foothills here in
Tucson and both the Ref. GPS antenna and the 2M link
antenna are on my 30' tower. The 2M antenna is a J-pole
at the top and is driven with 25W. The GPS ref antenna
is a Lowe at about the 20' level with a 18"x24" ground
plane and a horizon-to-horizon view. Using my GPS 40
in the field, I get a 9 meter 95% confidence level position
accuracy. This accuracy is due to the Garmin, not the
ref station.

When I started the beacon, there was almost no APRS
activity in the local area and so I operated continuously.
Now, there are many more stations, but I have still not
observed any problems. To be safe, however, I disable
the beacon if I am away from home on travel.

Jeff Vollin
KC6WFU

Steven R. Bible wrote:

> At 08:33 PM 3/17/99 -0600, you wrote:
> >I d/l the pdf file, but was unable to read the file. I would like to use the
> >DGPS with a KAM 3+ or a pico packet modem. I will keep looking. Thanks
> >Darrell
> >
> >Steven R. Bible wrote:
> >
> >> At 09:10 PM 3/15/99 -0600, you wrote:
> >> >If you find out anything, or have details about the construction on a
> >> >station, please forward it to me. Would like to use the DGPS for our
> Search
> >> >and Rescue efforts.
> >> >Thanks
> >> >Darrell
> >> >darrellc@flash.net
>
> Darrell, make sure you are using Acrobat Reader Version 3.0.
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>   n7hpr@amsat.org
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

33. [tacgps] Re: New to GPS with questions

From: Dan Hinz <dan.hinz@ieee.org>
Date: Thu, 18 Mar 1999 21:20:17 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11333-1999.03.18-23.24.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm not familiar with your particular model of Garmin receiver. I have
the GPS25-LVS board available through TAPR. It specs the current drain as
120mA (voltage 3.6 - 6.0VDC). If I had the -LVH model the current drain
is specified as 870mWatts for an input voltage of 6 to 40VDC, so at ~9V
that would be about 100mA. I imagine your device would be higher as it
is also driving a display. I believe a typical 9v battery capacity is
about 500mAH, you could expect ~4 hours...

In the Radio Amateur handbook it specs a DB9 as pin 2 for data from DCE
(to the PC); pin 3 as data to DCE (from the PC) and pin 5 as ground. You
should probably verify that with the manual.

To use TAC-32, make sure you get the latest version, 2.0.6 from the CNS
website
http://www.cnssys.com/tac32/

Does your GPS have a 1pps output? If not, I don't believe that TAC-32
will function properly.

73,
Dan W6LSN

Ted Sarah wrote:

> Hi all,
>
> Being new to GPS/APRS I have some getting started questions. I have
> gotten from TAPR the following: Garmin GPS-25
> Garmin GA-27 antenna
> GPS-20/25 Interface kit
>
> Now the questions:
>
> 1. How long will the GPS-25 with the GPS-20/25 run on a good
> quality 9v battery?
> 2. Can someone give me the pinning for the DB9 from the
> GPS-20/25?
>
> I'm going to give the TAC-32 a shot. Any comments?
>
> 73 - Ted - W8TTS
>
> e-mail: w8tts@gwis.com or w8tts@qsl.net
> home page: http://w3.gwis.com/~tsarah/ham.htm
>
> ---
> You are currently subscribed to tacgps as: DAN.HINZ@IEEE.ORG
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

34. [tacgps] Re: DGPS transmitter for Raleigh, NC area

From: Dave Martindale <davem@cs.ubc.ca>
Date: Thu, 18 Mar 1999 23:05:50 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11362-1999.03.19-01.08.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Using my GPS 40
>in the field, I get a 9 meter 95% confidence level position
>accuracy. This accuracy is due to the Garmin, not the
>ref station.

Yes, the old single-channel Garmins seem to be pretty noisy.

I've done some data collection from a variety of Garmin receivers,
with and without differential corrections (supplied by a Coast Guard
transmitter about 5 km from my house). Once you apply differential
correction, you see the errors due to noise in the receiver, and
there is a *big* difference between the old single-channel ones
(45XL, 20) and the newer 12-channel ones (12XL, II+, 25).

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] APRS/GPS at Dayton

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Fri, 19 Mar 1999 10:42:20 -0500 (EST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11396-1999.03.19-09.45.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For 1999,

  * I have added LAT/LONG grids to the maps in the Hamvention Magazine
    for convenience. (ie, a THD7 reporting from a bar or restaurant...)

  * Things we need:

    1) Someone to set up a TAPR DGPS transmitter at Dayton. Probably
        low power on 144.99 (note this is +600 from 144.39)

    2) Several stations (half dozen) to build Vicinity Digipeaters
        so we can track THD7 users indoors (this is simply a nearly
        deaf receiver and a normal "trace" DIGI TNC. Contact me.)

    3) Someone to be the official surveyor to use his best techniques
        to survey the four corners of the Hamvention grounds so that
        our maps next year will be "perfect".

If you can take one of these balls and run with it, let me know.
de WB4APR, Bob

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

36. [tacgps] Tac32 V 2.06 Passwords

From: Doug Bade <doug@clecom.com>
Date: Fri, 19 Mar 1999 12:24:48 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11409-1999.03.19-11.27.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I had a Registered Version of TAc32, and Installed New 2.06. It now shows I
am expired !!!!!! (Tac32, not me....) :) Can the administrator of Tapr
Users please email me and let me know what is up?? Tnx.

                                    Doug Bade KB8GVQ
                        Douglas Bade
                        Cleveland Communications
                        9045 Brookpark Rd.
                        Cleveland Ohio, 44129
                        800-878-6500
                        dbade@clecom.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] Re: APRS/GPS at Dayton

From: John Ackermann <jra@febo.com>
Date: Fri, 19 Mar 1999 12:47:18 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11413-1999.03.19-11.49.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In message <LYR5592-11396-1999.03.19-09.45.23--JRA#FEBO.COM@lists.tapr.org>, Bo
b Bruninga writes:
>For 1999,
>
> * Things we need:
>
>   1) Someone to set up a TAPR DGPS transmitter at Dayton. Probably
>   low power on 144.99 (note this is +600 from 144.39)

I've already spoken off-line with Bob about this request. I can provide
just about all the hardware (GPS, DGPS board, TNC, radio) for a DGPS station
on Hamvention grounds and can get the package assembled ahead of the show.
However, due to other commitments, I'm unlikely to be able to actually set
the thing up at Hara, take it down at the end of each day (if necessary),
tear it down Sunday, etc.

If someone can take on that role, drop me an email and we'll coordinate.

By the way -- last I checked, 144.99 did have some packet use in SW Ohio,
but not directly in the Dayton area. I'll do some snooping to see if using
it would cause a problem; my guess is that it would be OK.

Also, I'll do some checking to see if we can get at least one very accurate
lat/long for Hara.

73,
John N8UR
jra@febo.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] RE: Tac32 V 2.06 Passwords

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Fri, 19 Mar 1999 13:24:49 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11415-1999.03.19-12.28.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug,

Just put in the password again. It is the same as for 2.0.0.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Doug Bade
Sent: Friday, March 19, 1999 12:25 PM
To: TAPR Special Interest Group
Subject: [tacgps] Tac32 V 2.06 Passwords

I had a Registered Version of TAc32, and Installed New 2.06. It now shows I
am expired !!!!!! (Tac32, not me....) :) Can the administrator of Tapr
Users please email me and let me know what is up?? Tnx.

Doug Bade KB8GVQ
Douglas Bade
Cleveland Communications
9045 Brookpark Rd.
Cleveland Ohio, 44129
800-878-6500
dbade@clecom.com

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

39. [tacgps] CHOKE RING ANT QUESTIONS

From: Boyd Prestwood <k5ykg@bellatlantic.net>
Date: Fri, 19 Mar 1999 13:58:29 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11421-1999.03.19-13.01.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello SIG.

I have amassed all the parts necessary to construct the choke-ring antenna described in several emails and articles by Tom Clark, W3IWI. I was able to locate an additional 12" and 14" cake pan to extend the rings from the 10" cake pan in the photos. I have also been doing some searching of the WEB for additional info on choke-ring antennas. I have no microwave experience.

My questions are:

1. Will the addition of 12" & 14" pans, or rings, increase the effectiveness of the antenna significantly?

2. Will the "flanges" or rolled edges of the cake pans affect the way the antenna performs? I have the duct end-caps and electrical outlet box for the 8", 6" and 4" rings respectively and they have no rolled edges... they are perfectly "straight". If the rolled edges will "get in the way", I'll leave the 12" and 14" pans off and just stay with the 10" outer one per the design. I found a set of cake pans all shrink-wrapped with 6", 8", 10", 12", and 14" pans... might make a better looking piece of hardware but I would obviously sacrifice looks for performance!

3. Using the pop rivets, should the smooth round part of the rivet be inside the rings leaving the ugly part sticking out on the bottom? I would think so to keep the walls of the rings clear of obstructions that could otherwise affect the "cavities"?

4. What is the exact purpose for the choke-ring design... is it for the attenuation and/or elimination of multipath distortion only or does it offer any gain over the actual antenna sitting on a coffee can for a ground plane? How serious is multipath distortion anyway?

5. Is there some sort of a radome to cover the whole thing? I read where water beads causes some kind of problems with reception but didn't know if this was significant or not.

I'm gonna build it anyway... just wanted more in-depth info. Thanks to anyone who can help me out with answers.

73 de Boyd Prestwood, K5YKG (ex-W2HOB)
Southern New Jersey (for now!)

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

40. [tacgps] Re: New to GPS with questions

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Fri, 19 Mar 1999 16:16:38 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11431-1999.03.19-15.18.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Does your GPS have a 1pps output? If not, I don't believe that TAC-32
>will function properly.

Yes it will. I don't know at which version this started, but ick
programmed TAC32 to where it does not have to have 1PPS. Besides, if you
download the latest version you'll be set.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] Re: Tac32 V 2.06 Passwords

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Fri, 19 Mar 1999 16:30:29 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11434-1999.03.19-15.32.39--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:24 PM 3/19/99 -0500, you wrote:
>I had a Registered Version of TAc32, and Installed New 2.06. It now shows I
>am expired !!!!!! (Tac32, not me....) :) Can the administrator of Tapr
>Users please email me and let me know what is up?? Tnx.
>   Doug Bade KB8GVQ

Doug, for whatever reason, your name did not make it during the transistion
to the new listserver software. You have been re-added and you should
receive notification of the same. I also emailed the password to you.

Sorry 'bout that. If anyone else did not receive the password for TAC32
Version 2.0.x, please let me know.

For those that would like to register, please contact TAPR at

    http://www.tapr.org/tapr/html/Ftac32.html

You can order online, phone or fax the office. Cost of registration is
US49.50 for TAPR members, $55.00 for non-members. Information on TAPR
membership can be found at

    http://www.tapr.org/tapr/html/Fmembership.html

TAPR registers TAC32 for Amateur, Educational, or personal use (i.e.
non-commercial). Commercial users contact CNS Systems at

   http://www.cnssys.com

73,

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

42. [tacgps] Precision GPS Measurements

From: Doug Bade <doug@clecom.com>
Date: Fri, 19 Mar 1999 20:47:48 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11492-1999.03.19-19.53.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Sig;
        I was curios if anyone has experience in this area... I am talking to a
vendor of precision GPS units. He say's they have sub-centimeter GPS's for
Surveying, and these measurements are possible... OK... We have discussed
that the GPS signal received as displayed is at the antenna.... Where is
that little millimeter of antenna to which the sub-centimeter reading
refers too??? Just an interesting question (to me).. Doug.
                                        Doug Bade
                              doug@clecom.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

43. [tacgps] Re: Precision GPS Measurements

From: Russ Chadwick <kb0tvj@bouldernews.infi.net>
Date: Fri, 19 Mar 1999 21:19:48 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11506-1999.03.19-22.22.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

We do sub-centimeter positioning as the first step toward measuring the
precipitable water vapor in the atmospheric column above the GPS receiver as
described on our web page at http://www-dd.fsl.noaa.gov/   The reference point

for the position measurement is the focal point of the antenna. This is the point,
generally located a short distance behind the antenna aperture, which the far field
spherical wave fronts are centered about. Our antennas come from the manufacturer
with this point precisely characterized in the documentation. This information is
usually determined by measurements in a near field antenna range.

Russ
KB0TVJ

Doug Bade wrote:

>   Hello Sig;
>   I was curios if anyone has experience in this area... I am talking to a
> vendor of precision GPS units. He say's they have sub-centimeter GPS's for
> Surveying, and these measurements are possible... OK... We have discussed
> that the GPS signal received as displayed is at the antenna.... Where is
> that little millimeter of antenna to which the sub-centimeter reading
> refers too??? Just an interesting question (to me).. Doug.
>   Doug Bade
>   doug@clecom.com
>
> ---
> You are currently subscribed to tacgps as: KB0TVJ@BOULDERNEWS.INFI.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

44. [tacgps] logging range data and ephemeris data with TAC32 software

From: Kirk Alexander <kirk@Princeton.EDU>
Date: Sat, 20 Mar 1999 22:18:07 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11680-1999.03.20-21.21.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I want to log range data and differential binary data
from the TAPR dgpsib setup using TAC32. I can get the
@@Bf data etc. to show up in the Raw Data display window
by sending in the hardware commands that enable this output
using the Advanced Command input capability. But they don't
seem to show up in the output log. Are they being filtered or
do I need to enable things in some particular order to make
this work?

--
Kirk Alexander
MGR, Multimedia Engineering Computation Atelier
School of Engineering and Applied Science
Princeton University
Princeton, NJ 08544
609-258-5420 (tel)
609-258-6744 (fax)
kirk@princeton.edu
http://www.princeton.edu/~kirk/

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

45. [tacgps] Re: logging range data and ephemeris data with TAC32 software

From: Jeff Vollin <barnie@flash.net>
Date: Sat, 20 Mar 1999 21:53:48 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11688-1999.03.20-22.56.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you open your log file with a binary-capable editor I think
you will find the data is there, TAC32 just does not interpret
the data for you. I know several others who what to work
with this same data (including myself) so if you write something
please let us all in on it!

Jeff Vollin

Kirk Alexander wrote:

> I want to log range data and differential binary data

> from the TAPR dgpsib setup using TAC32. I can get the
> @@Bf data etc. to show up in the Raw Data display window
> by sending in the hardware commands that enable this output
> using the Advanced Command input capability. But they don't
> seem to show up in the output log. Are they being filtered or
> do I need to enable things in some particular order to make
> this work?
>
> --
> Kirk Alexander
> MGR, Multimedia Engineering Computation Atelier
> School of Engineering and Applied Science
> Princeton University
> Princeton, NJ 08544
> 609-258-5420 (tel)
> 609-258-6744 (fax)
> kirk@princeton.edu
> http://www.princeton.edu/~kirk/
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

46. [tacgps] APRS question

From: Phil Reed <pcr@ic.net>
Date: Sun, 21 Mar 1999 21:14:25 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11815-1999.03.21-20.20.48--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm a member of an non-profit organization that has an extended (week+)
outdoor event, and I'm part of the security staff. It occurred to us that
using APRS on the security patrol carts could be useful.

I've not looked at the APRS software yet, so this question might be
answered there. However, let me pose it here first:

We'd like to have DGPS accuracy for the mobile units, without the added
complexity of hanging an DGPS receiver on each mobile unit. Would it be
possible to configure the APRS display software to handle the DGPS
processing? The assumption would be that the same DGPS correction would
apply to all the mobile units. The mobile units will be probably not range
more than a mile away from the center of the site, and the terrain is not
far from flat, with some woods, so I think that satellite visibility is not
an issue.

Any discussion would be appreciated.

...phil / w8sca

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

47. [tacgps] Re: "Differential GPS Using Amateur Radio"

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Mon, 22 Mar 1999 04:55:37 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11834-1999.03.21-22.59.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Horzepa, Stan" wrote:
>
> FYI, the current issue of "The ARRL Web Extra" 'zine, which is accessible
> from the ARRL Members Only Web page (http://www.arrl.org/members/), features
> an article titled "Differential GPS Using Amateur Radio" by Robert
> Gonsett, W6VR.

I'm rather annoyed -- although the article cites some of Pete Prossen's
activities
and mentions TAPR at the very bottom of the page, it >>>TOTALLY<<< ignores
the

initial W3IWI-13 DGPS beacon on the air more than 3 years ago, or the
pioneering
work that Steve Bible did in making the TAPR board happen.

For those of you who didn't bother to access the ARRL Web Page, this
ignorance
and lack of research is quite obvious in the opening paragraph:

> This is a story of one Amateur Radio operator's ongoing efforts to improve
> the accuracy of conventional GPS by building something called a DGPS system.
> The "D" stands for "differential," and it refers to the kind of correction
> data that are employed. DGPS already is used in commercial circles, but this
> is the first time that I have seen such a system constructed with low-cost
> Amateur Radio gear.

Even if Bob Gonsett didn't know of the past efforts, I would have thought
that
someone in the hallowed halls of Newington would have been smart enough to
pick up on this glaring error.

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

48. [tacgps] Re: "Differential GPS Using Amateur Radio"

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 22 Mar 1999 01:09:22 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11858-1999.03.22-01.12.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

They're all inbred, and the chromosomes are missing several
links at this late stage. Members only--my ass...

Pete probably doesn't even have an Internet browser...

Steve

-----Original Message-----

>I'm rather annoyed -- although the article cites some of Pete Prossen's
>activities
>and mentions TAPR at the very bottom of the page, it >>>TOTALLY<<< ignores
>the
>initial W3IWI-13 DGPS beacon on the air more than 3 years ago, or the
>pioneering
>work that Steve Bible did in making the TAPR board happen.
>
>
>For those of you who didn't bother to access the ARRL Web Page, this
>ignorance
>and lack of research is quite obvious in the opening paragraph:
>
>> This is a story of one Amateur Radio operator's ongoing efforts to
improve
>> the accuracy of conventional GPS by building something called a DGPS
system.
>> The "D" stands for "differential," and it refers to the kind of
correction
>> data that are employed. DGPS already is used in commercial circles, but
this
>> is the first time that I have seen such a system constructed with
low-cost
>> Amateur Radio gear.
>
>Even if Bob Gonsett didn't know of the past efforts, I would have thought
>that
>someone in the hallowed halls of Newington would have been smart enough to
>pick up on this glaring error.
>
>73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

49. [tacgps] Re: Precision GPS Measurements

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Mon, 22 Mar 1999 18:32:06 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-11932-1999.03.22-12.37.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug Bade wrote:
>[snip] ... sub-centimeter GPS's for
> Surveying, and these measurements are possible... OK... We have discussed
> that the GPS signal received as displayed is at the antenna.... Where is
> that little millimeter of antenna to which the sub-centimeter reading
> refers too???

and Russ, KB0TVJ replied
> ...The reference point
> for the position measurement is the focal point of the antenna. This is the point,
> generally located a short distance behind the antenna aperture, which the far field
> spherical wave fronts are centered about. Our antennas come from the manufacturer
> with this point precisely characterized in the documentation. This information is
> usually determined by measurements in a near field antenna range.

Sorry to be late in answering Doug, but I was in Alaska on business and
just
got back. These antenna-related issues refer to something that is one of my
specialties. Russ is nearly correct in what he says, but "focal point" is
the wrong terminology --- the correct words should have been "phase
center".

The sub-cm measurements that Doug asks about are achieved by logging the
phase of the 1575 MHz L1 signal (and for some applications also the 1227
MHz
L2 signal) for each of the satellites in view at two or more stations. The
L1 microwave frequency corresponds to a 19 cm (~7.5 inch) wavelength, so
the carrier phase repeats (i.e. is ambiguous) every 19 cm. With the signal-
to-noise achieved in practice, this 19 cm long "ruler" can be split into
~100 parts, i.e. it can be resolved to ~2 mm, albeit with a 19 cm
ambiguity. The difference phase measurement between the two sites
constitutes an interferometer.

The interferometric phase measurement has a geometric contribution due
to the desired vector measurement baseline plus the satellite geometry,
and has some instrumental biases. The satellite geometry part is taken
care of by either using the ephemerides broadcast by the satellites in
realtime (which put the satellites into a ~20 meter box ~10,000 km away),
or more precise orbits (~20 cm box) available a day later from the
IGS (http://igscb.jpl.nasa.gov or http://cddisa.gsfc.nasa.gov).

The instrumental biases arise from phase delays in the antennas (more
on this later), coaxial cables, and internally in the GPS receivers. But
all the N satellites in view share these biases, so there are N-1 bias-
free observables available.

To crunch the data and eliminate the 19 cm carrier phase ambiguities,
you make use of the fact that the baseline-satellite geometry is constantly
changing. Satellites rise, move across the sky and then set with a 12 hour
periodicity. The earth rotates under the satellite constellation every
24 hours. The changing pattern for the combination of all visible
satellites "fits" the ambiguous observations for a unique point if
you have gathered enough data.

Now back to the antenna part of this process. If the two stations in
the interferometric baseline have identical antennas, and if they are
close enough so that the satellite az/el is nearly the same at both
ends, then the antenna's phase properties will cancel out and be
irrelevant. And the location of the real phase reference "point"
doesn't matter as long as you assume it is the same at both ends
of the baseline.

The geometric point within the antenna where the signals are collected
is called the "phase center". Unfortunately, for a real antenna, the
phase center is not a single point and it moves around depending on:
   - the elevation of the satellite
   - the azimuth of the satellite
   - the signal frequency
   - multipath in the vicinity of the antenna
   - diffraction by structures near the antenna.

For a description of some of these effects, I refer you to a paper by
Bruce Schupler and me "How Different Antennas Affect the GPS Observable"
in GPS World, Nov.91, page 32. And for a lot of details on specific
antennas, see out paper "GPS User Antennas", Navigation 41, pp278-295,
Fall 1994. Bruce and I continue to work in this field and have a number
of subsequent papers with details on a lot of more modern antennas. We
do our "absolute" measurements on a precision indoor antenna range at
NASA Goddard, and then verify them in the field at my IGS site (GODE)
near Goddard.

You can see some of the activities at the anechoic chamber in the JPEG
pictures at ftp://aleph.gsfc.nasa.gov/GPS/antennas/ -- specifically see
ftp://aleph.gsfc.nasa.gov/GPS/antennas/6_choke_ants.jpg to see six
nearly identical choke-ring antennas from 4 manufacturers collected
for a range session last October. You might also note the file
ftp://aleph.gsfc.nasa.gov/GPS/antennas/gode-ant.jpg to see my GODE
GPS + VLBI station near Goddard. [The other stuff in this directory
includes photos of my home-brew L1 choke-ring antenna and info on
Matjaz (S53MV)'s quadrifilar helix antenna.]

[As an aside to Russ -- the phase center values that the manufacturers
 paste on their products are in general guesses, and assume no elevation
 dependence. They really rely on the interferometeric phase differences
 to achieve their specs. We are constantly deluged with requests from
 the manufacturers to measure (and by implication to "certify") their
 newest, greatest products in the GSFC anechoic chamber.]

There can be several ways that the "same at both ends" assumption may
be violated:

(1) If the antenna has a non-uniform azimuth phase response (i.e. a
    non-symmetric pattern), then the antennas need to be mounted so
    that their "Norths" coincide. All manufacturers provide a "North"
    mark to guard against such biases. And the manufacturers work hard
    to make antennas with very uniform azimuthal responses.

(2) If the antennas are not level, then the tilt will cause any
    elevation-dependent biases to have an azimuthal contribution.
    Proper GPS surveying requires that the antennas be properly
    leveled!

(3) If the manufacturer does not exercise good manufacturing
    configuration control, his product may vary from unit to unit.
    We have a lot of cases where one production lot is centimeters
    from another lot of similar antennas. And if the antennas
    are of a different style, you can bet there will be differences.
    And if an antenna is mistreated in the field, it will affect the
    measurements. A careful surveyor will periodically recheck a 5-10
    meter reference baseline to make certain that his antennas are
    still "good"!

(4) If the baseline is more than ~100 km long, then the antenna az/el
    at the two ends will start to differ (111 km = 60 nmi = 1 degree
    of latitude) by enough to be of concern. At that point, careful
    users introduce a detailed phase map (like those produced by
    Bruce & me) into their data analysis.

(5) The local multipath and effects of the antenna tripod/pier are
    quite real, but its beyond the scope of this note for me to comment!

In conclusion -- if you are using GPS at levels of 5-10 cm, then the
antenna effects aren't too important. As your requirements push down
into the millimeter range, then they become more and more and more
important!

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

50. [tacgps] Re: "Differential GPS Using Amateur Radio"

From: "Pete Prossen" <prossen@znet.com>
Date: Tue, 23 Mar 1999 13:17:42 -0800

To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12042-1999.03.22-23.19.39--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>They're all inbred, and the chromosomes are missing several
>links at this late stage. Members only--my ass...
>
>Pete probably doesn't even have an Internet browser...
>
>Steve

OK, guys, let me provide a little background for this issue before any more of you clutter this server with inappropriate rude remarks.

To begin, Bob Gonsett W6VR is one of the more beloved hams in these parts - a derivative I'm sure of the old Gonset Radio Company. Although the family name is spelled with 2 t's, that pattern didn't fit the diamond-shaped logo for the Radio Company so they dropped to a single t.

Younger hams may not be familiar with Gonset. We old guys remember it well. I had several Gonset radios back in the early '60's.

You may not realize that DGPS is a non-exciting issue around here. I think I'm the only ham in the county that finds it fascinating. After I built my reference station about a year ago, I took it to several meetings of the Palomar Amateur Radio Club (very old club with over 900 members) hoping to snag some interest. Even gave a presentation on it at one meeting with lots of viewgraph transparencies. I couldn't find a single ham that even wanted to help me range test it. I did, however, obtain permission to do some county-wide testing using one of the PARC repeaters for a few months.

I set up the station at the PARC picnic last fall, and was pleasantly surprised when Bob and several other hams offered to help me exercise the unit. All we did was hike around the park all day and notice how the rover coordinates were very repeatable at each check point with DGPS, and how they were not with DGPS turned off.

Bob must have been impressed, for he wrote a little description of the exercise for the PARC newsletter. Somehow a few weeks later this article found its way to the web page of an association of broadcast engineers. After that I got an E-mail request from ARRL asking for a picture of "the rover". I sent it and suggested that they might also like to have a picture of the reference station.

I didn't write the article, nor have I seen it. Not because I don't have an Internet browser, but because I am not an ARRL member. I didn't even get a preview of it after sending the photos.

So tell me, is it just a little story about hiking around a park at a ham radio picnic that has you upset? Or was there something else in the article that was offensive?

My guess, based on ARRL's eagerness to publish this little nothing story, is that they would be thrilled to publish any article you would care to submit. If you believe the readership (or the staff for that matter) needs more exposure to DGPS, how about it? I think I still have an E-mail address for the editor who requested the photos if anyone wants it.

Of course, only the members will be able to view it.

In case anyone out there is interested, here is my DGPS status:

The reference station pictured (I think) in the ARRL article was constructed with the TAPR board. It is permanently installed here and works well, but no one other than myself cares to make use of it.

In anticipation of some interest from the Palomar club, I designed a next generation model interface board for the Oncore VP. I felt the need for additional controls and another communication port to make the unit more adaptable to the crowded spectrum we live with here in Southern California. The surface-mount board is

designed to stack with the VP like the TAPR board. The additional
ports are provided by the 17C756 PIC processor. Sadly, the project
gathers dust due to lack of interest. Maybe I should move to the East,
but I don't think I could adapt to the climate.

Regards to all

Pete Prossen
WA6ZUH
prossen@znet.com

P. S. to Steve: I really do have a browser, in fact I have three of them
spread around the three computers I use. I also keep webs of my
retirement hobbies. Since my DGPS hobby is dormant right now, have
a look at www.zweb.com/1125lorenzo which is where I'm spending
most of my time.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

51. [tacgps] Modified Z-Count

From: mdmiller@eaze.net
Date: Tue, 23 Mar 1999 07:12:54 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12092-1999.03.23-07.12.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am confused about what goes into the modified z-count field in the second
word of the RTCM SC104 DGPS type 1 message. The spec is not clear. I
thought it might be the number of seconds past the hour, but with a scale
factor of 0.6 seconds, that does not seem like a correct assumption.

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

52. [tacgps] Re: DGPS system at Dayton?????

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 23 Mar 1999 16:08:55 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12155-1999.03.23-15.11.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What would be the minimum system for DGPS operation at Dayton? Would the
Kenwood TH-D7A HT be able to
send the RTCM corrections to a handheld GPS unit? Since the GPS port of the D7A
expects the input to be
NMEA messages, would you connect the "computer" port of the D7A to your GPS
instead. I have a Magellean
Meridian XL that I have connected to a PK-232, and have successfully decoded
RTCM corrections sent by packet
from one of the TAPR boards. Has anybody tried this with the Kenwood radio?
  Thanks,
  Jim Korenz N8PXW   (jfkorenz@goodyear.com)

bounce-tacgps-5599@lists.tapr.org on 03/16/99 09:37:44 AM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc: aprssig@tapr.org @ INTERNET
Subject: [tacgps] DGPS system at Dayton?????

I think we need a DGPS system at Dayton. I am currently digitizing a map
good to the nearest parking space. Is someone going to set up a
transmitter?

de WB4APR, Bob

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

53. [tacgps] post processing of oncore range data

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Tue, 23 Mar 1999 16:46:07 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12167-1999.03.23-15.50.03--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,
  I am working on getting the pieces together to post-correct
the range data that can be saved from TAC32 in binary
mode from the Motorola Oncore/DGPSIB. I enable capturing of
these messages by sending the @@Eg and @@Bi binary commands
to enable range data and ephemeris data collection respectively.

I have then been trying to interpret the @@Eg messages using
the parse.c program that came with the Oncore diskette when
I received my copy of TAC32. This program seems to have been
written to read the shorter messages (@@Bg) from the earlier
6 channel Motorola board. Does someone know how I can get
some documentation on the exact format of the binary data
that comes out of the Oncore? It must have been available
to those working on TAC32???

For everyone's information I have found two products that
might help in this endeavor though I haven't purchased either yet.
One is something called PostPoint from GeoReseach
(http://www.georesearch.com --though postpoint is not listed here)
and Inverse.DLL from WayPoint Consulting
(http://www.waypnt.com/INVERSE.HTM). Does anyone have any
experience with either of these? Are there other options?
--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)
http://www.princeton.edu/~kirk
[Attachment: vcard.vcf; text/x-vcard; 292 bytes]

54. [tacgps] Re: post processing of oncore range data

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 23 Mar 1999 19:59:40 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12200-1999.03.23-19.02.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Does someone know how I can get
>some documentation on the exact format of the binary data
>that comes out of the Oncore? It must have been available
>to those working on TAC32???

Kirk, you'll find the Oncore User's Manual at

    http://www.mot.com/ACCES/GPS/products/manual.html

- Steve, N7HPR
  n7hpr@tapr.org

n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

55. [tacgps] Re: post processing of oncore range data

From: Jeff Vollin <barnie@flash.net>
Date: Tue, 23 Mar 1999 20:54:34 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12221-1999.03.23-21.57.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think you will find that the referenced document applies only to
the UT and GT versions of the ONCORE except that many commands
of these units are common to the VP as well. Unfortunately, the
command you really need for post processing, @@Eg is not
described in the online manual at all. I got a copy of the relevant
manual page from Synergy via Fax. I guess that manual was never
drafted in electronic form. I believe you can purchase the complete
manual from Synergy also.
  The manual pages you need are 6.130 to 6.133 from the VP manual.
I could fax you my pages but the second pass through the fax will
likely make the document unreadable.

Jeff Vollin

Steven R. Bible wrote:

> >Does someone know how I can get
> >some documentation on the exact format of the binary data
> >that comes out of the Oncore? It must have been available
> >to those working on TAC32???
>
> Kirk, you'll find the Oncore User's Manual at
>
>   http://www.mot.com/ACCES/GPS/products/manual.html
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>   n7hpr@amsat.org
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

56. [tacgps] Re: post processing of oncore range data

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 23 Mar 1999 23:09:25 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12223-1999.03.23-22.11.50--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Opps, thank Jeff. Kirk, I have the manual. If you need those pages I can
send them to you. Jeff is correct, you can purchase the manual from
Synergy. If you are doing serious work with the Oncore VP I highly
recommend getting the manual.

- Steve

At 08:54 PM 3/23/99 -0700, you wrote:
>I think you will find that the referenced document applies only to
>the UT and GT versions of the ONCORE except that many commands
>of these units are common to the VP as well. Unfortunately, the
>command you really need for post processing, @@Eg is not
>described in the online manual at all. I got a copy of the relevant
>manual page from Synergy via Fax. I guess that manual was never
>drafted in electronic form. I believe you can purchase the complete
>manual from Synergy also.
> The manual pages you need are 6.130 to 6.133 from the VP manual.

>I could fax you my pages but the second pass through the fax will
>likely make the document unreadable.
>
>Jeff Vollin
>
>Steven R. Bible wrote:
>
>> >Does someone know how I can get
>> >some documentation on the exact format of the binary data
>> >that comes out of the Oncore? It must have been available
>> >to those working on TAC32???
>>
>> Kirk, you'll find the Oncore User's Manual at
>>
>>   http://www.mot.com/ACCES/GPS/products/manual.html
>>
>> - Steve, N7HPR
>>   n7hpr@tapr.org
>>   n7hpr@amsat.org
>>
>> ---
>> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
>> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
>
>---
>You are currently subscribed to tacgps as: SRBIBLE@GATE.NET
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

57. [tacgps] Re: TAC32 Display problems fixed

From: "Jim JJ Johnson (HPL)" <jjohnson@hpl.hp.com>
Date: Wed, 24 Mar 1999 07:53:38 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12306-1999.03.24-09.56.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rick,
   I have run TAC32 Ver. 2.1.0 overnight with the Sat. Az-El chart
open the entire time and I have experienced no problems with it.
Looks, so far, like it's fixed!

73,
Jim W6SC

"Richard M. Hambly" wrote:

> To everyone who has been experiencing problems with Tac32 when leaving the
> Satellite View Chart open for an extended period of time, similar to Dan's
> problem (see below), Version 2.0.6 is now available at
> http://www.cnssys.com/tac32. Release notes are also on that page. Please
> try this version and let me know what happens - I really need the feedback.
>
> Rick
> WB2TNL
>

Jim Johnson
jjohnson@hpl.hp.com
ACompanyFormerlyKnownAsHP
Palo Alto, CA

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

58. [tacgps] Re: TAC32 Display problems fixed

From: Dan Hinz <dan.hinz@ieee.org>
Date: Wed, 24 Mar 1999 19:11:27 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12399-1999.03.24-22.18.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I agree. I've not had a chance to download 2.1.0 yet, but 2.0.6 works well.
I've had it on line for a week now and no problems related to an open Az-El
display. Great work!
73,
Dan, W6LSN

Jim JJ Johnson (HPL) wrote:

> Rick,
>   I have run TAC32 Ver. 2.1.0 overnight with the Sat. Az-El chart
> open the entire time and I have experienced no problems with it.
> Looks, so far, like it's fixed!
>
> 73,
> Jim W6SC
>
> "Richard M. Hambly" wrote:
>
> > To everyone who has been experiencing problems with Tac32 when leaving the
> > Satellite View Chart open for an extended period of time, similar to Dan's
> > problem (see below), Version 2.0.6 is now available at
> > http://www.cnssys.com/tac32. Release notes are also on that page. Please
> > try this version and let me know what happens - I really need the feedback.
> >
> > Rick
> > WB2TNL
> >
>
> ----------------------------------
> Jim Johnson
> jjohnson@hpl.hp.com
> ACompanyFormerlyKnownAsHP
> Palo Alto, CA
> ----------------------------------
>
> ---
> You are currently subscribed to tacgps as: DAN.HINZ@IEEE.ORG
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

59. [tacgps] DGPS Article: An Apology

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Thu, 25 Mar 1999 04:48:24 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12401-1999.03.24-22.51.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Apparently some thought I was angry at Pete Prosen (WA6ZUH) in my
note commenting on the ARRL "Members Only" article. That was definitely
not my intent -- Pete has been a serious contributor to the DGPS
development activities and is a "white hat" "good guy".

And to respond to Pete's comments, I know Bob Gonsett (W6VR) well
(although its been years since I've seen him). Obviously he was
most impressed with Pete's efforts.

My concern/anger/frustration was really aimed at the ARRL. I would
have thought they would have exercised some degree of editorial
responsibility to insure the accuracy of material they publish.
They included Pete's excellent description of GPS/DGPS as a sidebar

in the article, and Pete's material has a pointer to the TAPR Web
Site. If the ARRL folks had only bothered to look at the reference
in the article, they would have learned that the DGPS development
was in fact more than three years old!

I guess that this old crumugeon is developing a thin skin ;<}
I apologize if I caused Pete or Bob any grief for my ill-chosen
words. That wasn't my intent.

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

60. [tacgps] Re: post processing of oncore range data

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Thu, 25 Mar 1999 07:09:26 -0500 (EST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: lerman@lerman.nai.net (Kenneth Lerman)
Message-ID: <LYR6754-12436-1999.03.25-06.33.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

...
> Hi,
>   I am working on getting the pieces together to post-correct
> the range data that can be saved from TAC32 in binary
> mode from the Motorola Oncore/DGPSIB. I enable capturing of
> these messages by sending the @@Eg and @@Bi binary commands
> to enable range data and ephemeris data collection respectively.
...

> For everyone's information I have found two products that
> might help in this endeavor though I haven't purchased either yet.
> One is something called PostPoint from GeoReseach
> (http://www.georesearch.com --though postpoint is not listed here)
> and Inverse.DLL from WayPoint Consulting
> (http://www.waypnt.com/INVERSE.HTM). Does anyone have any
> experience with either of these? Are there other options?
> --
> Kirk Alexander,
> Manager
> Multimedia Engineering Computation Atelier (MECA)
> School of Engineering and Applied Science
> E-430 Engineering Quadrangle
> Princeton University
> Princeton, N.J. 08544-5263
> (609) 258-5420 (tel)
> (609) 258-6744 (fax)
> kirk@princeton.edu (email)
> http://www.princeton.edu/~kirk
...

Kirk,

You might want to look at:
   http://callisto.worldonline.nl/~samsvl/software.htm

The C code referenced on that page compiles under Unix -- and it is free.

I would be interested in getting my hands on your code so that I could do the
same type of post processing you are interested in. Please keep us
informed on your progress.

Ken

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

61. [tacgps] Motorola manuals

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Thu, 25 Mar 1999 09:38:49 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12452-1999.03.25-08.41.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks to everyone for the help in getting to the Motorola Manual
The online manual (http://www.mot.com/ACCES/GPS/products/manual.html)
is helpful but as a couple of folks pointed out does not have the
extended messages I need. I have ordered the paper one from Synergy
who told me they do not plan to put the full manual online. Cost = $50.
--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)
http://www.princeton.edu/~kirk
[Attachment: vcard.vcf; text/x-vcard; 292 bytes]

62. [tacgps] $100 Garmin GPS-III Upgrade to Brand New III+

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Fri, 26 Mar 1999 17:06:50 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12606-1999.03.26-16.09.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For those of you who have a GPS-III and have been salivating
over the new GPS-III+ capabilities, you might like to know
that Garmin is offering a very attractive exchange upgrade.

For $100 you send in your III and in 1-2 weeks get back a
brand new III+ complete with an RS232 data cable and a fresh
one year warranty!

If you are in the USA, here is what you do to get the upgrade:

1. Call Garmin at 1-800-800-1020.

2. Press 3 at the voicemail prompt.

3. When a person finally answers he/she will ask you
   for a return shipping address, the serial number
   on your present unit, and for your VISA/MasterCard
   number. He/she will then give you a magic return
   merchandise authorization (RMA) number.

4. As a caution -- be sure to download all your old
   waypoints to your PC if you want to save them!

5. Ship your old unit to Garmin at
     GARMIN INTERNATIONAL
     1200 E 151st ST
     OLATHE, KS 66062
     ATTENTION: (the magic RMA from step 3)

6. Wait 1-2 weeks.

You can also order the $100 US Map CD (Tiger database,
roughly like Delorme's SA6) and/or the $70 World Base
Map CD while on the phone during step 3.

It looks like the "street" price for the US Map CD is ~$70
(at least from Larry James @ 303-258-0576). Larry didn't
have a price for the World map when I called him. Prices for
brand new III+ units seem to be in the $320 - $350 range.

I've only completed steps 1-3 myself since I want to do a step
4 before I let go of my old GPS-III, so don't blame me if there
are any errors or problems! [In other words -- "Don't Shoot
the Messenger to the King's !!!"]

73 de Tom, W3IWI

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

63. [tacgps] @@Eg

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Sat, 27 Mar 1999 17:22:59 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12656-1999.03.27-00.28.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

I was wondering if anyone out there who had the VP manual would be able
to scan the pages with the DGPS output (in Motorola format) documented
and email it to me. It would be used for private study purposes. It
would be much appreciated.

Many thanks

Darryl VK2TDS

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

64. [tacgps] Re: @@Eg

From: Jeff Vollin <barnie@flash.net>
Date: Sat, 27 Mar 1999 12:03:10 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12712-1999.03.27-13.06.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you contact Synergy I think they will fax the pages you need.
That is how I got mine. I would send mine, but a second scanning
would probably give a poor copy. Find Synergy at:
 http://www.synergy-gps.com/

Jeff Vollin

Darryl Smith wrote:

> Hi,
>
> I was wondering if anyone out there who had the VP manual would be able
> to scan the pages with the DGPS output (in Motorola format) documented
> and email it to me. It would be used for private study purposes. It
> would be much appreciated.
>
> Many thanks
>
> Darryl VK2TDS
>
> ---
> You are currently subscribed to tacgps as: BARNIE@FLASH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

65. [tacgps] RE: Modified Z-Count

From: "Martin Boissonneault (E-mail)" <ve2mrx@iname.com>
Date: Sun, 28 Mar 1999 13:12:04 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12855-1999.03.28-12.23.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Mark!
        If you get an answer, please mail me... I am also looking for that info. I

am building a small prog. that will take data from the Motorola Oncore VP
and form RTCM type 1 messages from that...

        Thanks in advance, Martin VE2MRX

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of mdmiller@eaze.net
Sent: March 23, 1999 08:13
To: TAPR Special Interest Group
Subject: [tacgps] Modified Z-Count

I am confused about what goes into the modified z-count field in the second
word of the RTCM SC104 DGPS type 1 message. The spec is not clear. I
thought it might be the number of seconds past the hour, but with a scale
factor of 0.6 seconds, that does not seem like a correct assumption.

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: VE2MRX@INAME.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

66. [tacgps] RE: Modified Z-Count

From: mdmiller@eaze.net
Date: Sun, 28 Mar 1999 13:14:55 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12859-1999.03.28-13.19.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Martin and group,

I have not heard from anyone on this subject, but further research
indicates that it may not be needed for type one messages. I have found
some information by downloading
http://www.wsrcc.com/wolfgang/ftp/Jdgpsip1.01.exe. Wolfgang is sending
type 9 messages and is using the modified Z count. I have written a
windows program that generates word 1 and word 2 (header) and will be
working on the other words shortly. I too will be using the Oncore VP.

At 01:12 PM 3/28/99 -0500, you wrote:
>Hi Mark!
>   If you get an answer, please mail me... I am also looking for that info. I
>am building a small prog. that will take data from the Motorola Oncore VP
>and form RTCM type 1 messages from that...
>
>   Thanks in advance, Martin VE2MRX
>
>-----Original Message-----
>From: bounce-tacgps-5545@lists.tapr.org
>[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of mdmiller@eaze.net
>Sent: March 23, 1999 08:13
>To: TAPR Special Interest Group
>Subject: [tacgps] Modified Z-Count
>
>
>I am confused about what goes into the modified z-count field in the second
>word of the RTCM SC104 DGPS type 1 message. The spec is not clear. I
>thought it might be the number of seconds past the hour, but with a scale
>factor of 0.6 seconds, that does not seem like a correct assumption.
>
>73
>Mark Miller
>N5RFX
>

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

67. [tacgps] RE: Modified Z-Count

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 28 Mar 1999 17:18:39 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12874-1999.03.28-16.21.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark Miller N5RFX said...

>I am confused about what goes into the modified z-count field in the second
>word of the RTCM SC104 DGPS type 1 message. The spec is not clear. I
>thought it might be the number of seconds past the hour, but with a scale
>factor of 0.6 seconds, that does not seem like a correct assumption.

Then Martin VE2MRX said...

>If you get an answer, please mail me... I am also looking for that info. I
>am building a small prog. that will take data from the Motorola Oncore VP
>and form RTCM type 1 messages from that...

And Mark again...

>I have not heard from anyone on this subject, but further research
>indicates that it may not be needed for type one messages. I have found
>some information by downloading
>http://www.wsrcc.com/wolfgang/ftp/Jdgpsip1.01.exe. Wolfgang is sending
>type 9 messages and is using the modified Z count. I have written a
>windows program that generates word 1 and word 2 (header) and will be
>working on the other words shortly. I too will be using the Oncore VP.

Not really knowing what you guys are up to, and hazarding beating a dead
horse...

The TAPR DGPS Ref Station already does the things you guys mention above.
It takes the Motorola binary and converts it to RTCM Type 1 message.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

68. [tacgps] RE: Modified Z-Count

From: mdmiller@eaze.net
Date: Sun, 28 Mar 1999 20:40:47 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12896-1999.03.28-20.43.55--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 05:18 PM 3/28/99 -0500, Steve, N7HPR wrote:
>Not really knowing what you guys are up to, and hazarding beating a dead
>horse...
>
>The TAPR DGPS Ref Station already does the things you guys mention above.
>It takes the Motorola binary and converts it to RTCM Type 1 message.

Yes Steve, I am familiar with the TAPR kit for $179.00. Does that include a
copy of the source code for the PIC?

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

69. [tacgps] Re: Modified Z-Count

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 28 Mar 1999 21:53:55 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12898-1999.03.28-20.56.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:40 PM 3/28/99 -0600, you wrote:
>At 05:18 PM 3/28/99 -0500, Steve, N7HPR wrote:
>>Not really knowing what you guys are up to, and hazarding beating a dead
>>horse...
>>
>>The TAPR DGPS Ref Station already does the things you guys mention above.
>>It takes the Motorola binary and converts it to RTCM Type 1 message.
>
>Yes Steve, I am familiar with the TAPR kit for $179.00. Does that include a
>copy of the source code for the PIC?

Mark, you drive a hard bargan. No, the source code is not avaiable.

The kit was developed for amateurs and others to take advantage of a low
cost DGPS Reference Station. Proceeds from the sale of the DGPS Ref Sta
support other TAPR projects, most notibly, the FHSS Radio.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

70. [tacgps] Re: Modified Z-Count

From: mdmiller@eaze.net
Date: Sun, 28 Mar 1999 23:22:49 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-12912-1999.03.28-23.25.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:53 PM 3/28/99 -0500, Steve, N7HPR wrote:
>Mark, you drive a hard bargan. No, the source code is not avaiable.
>
>The kit was developed for amateurs and others to take advantage of a low
>cost DGPS Reference Station. Proceeds from the sale of the DGPS Ref Sta
>support other TAPR projects, most notibly, the FHSS Radio.

I am not looking for a bargin, but am trying to roll my own DGPS reference
station. I am new to programming and look for projects to advance my
skills. I guess I am doing what hams used to do years ago when they made
their own gear. I thought someone here might be able to help me with an
area that I didn't understand. I'll find the answer somewhere else.

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

71. [tacgps] Re: Modified Z-Count

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Tue, 30 Mar 1999 03:39:00 +0300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13046-1999.03.29-18.45.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Does this mean that the source code for the FHSS radio will not be available
for others to experiment with? Not even the 360 RTOS?

Regards,
David

From: mdmiller@eaze.net

To: TAPR Special Interest Group
Subject: [tacgps] Re: Modified Z-Count
Date: Monday, 29 March, 1999 8:22AM

At 09:53 PM 3/28/99 -0500, Steve, N7HPR wrote:
>Mark, you drive a hard bargan. No, the source code is not avaiable.
>
>The kit was developed for amateurs and others to take advantage of a low
>cost DGPS Reference Station. Proceeds from the sale of the DGPS Ref Sta
>support other TAPR projects, most notibly, the FHSS Radio.

I am not looking for a bargin, but am trying to roll my own DGPS reference
station. I am new to programming and look for projects to advance my
skills. I guess I am doing what hams used to do years ago when they made
their own gear. I thought someone here might be able to help me with an
area that I didn't understand. I'll find the answer somewhere else.

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: CURETON@TRSMPD01ME.NTC.NOKIA.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

72. [tacgps] Re: Modified Z-Count

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 29 Mar 1999 18:58:24 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13047-1999.03.29-19.01.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would expect the authors would be given commercial rights
to the code, so no, I doubt the Source will ever be released.

>Does this mean that the source code for the FHSS radio will not be
available
>for others to experiment with? Not even the 360 RTOS?
>
>Regards,
>David

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

73. [tacgps] Re: [ss] Re: Modified Z-Count

From: John Koster <w9ddd@tapr.org>
Date: Mon, 29 Mar 1999 19:05:43 -0600 (CST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-13048-1999.03.29-19.08.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think the OS is already available (but don't ask me where). There is
a book (or two?) written by the origianl author (Comer?) of XINU that
documents it very well.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==

   Those who give up freedom to attain security ultimately have neither.
 Hint - it's a small price to pay for ____ - fill in your favorite cause.

On Tue, 30 Mar 1999, Cureton David (NTC/MPD) wrote:

> Does this mean that the source code for the FHSS radio will not be available
> for others to experiment with? Not even the 360 RTOS?
>
> Regards,

> David
> ----------
> From: mdmiller@eaze.net
> To: TAPR Special Interest Group
> Subject: [tacgps] Re: Modified Z-Count
> Date: Monday, 29 March, 1999 8:22AM
>
> At 09:53 PM 3/28/99 -0500, Steve, N7HPR wrote:
> >Mark, you drive a hard bargan. No, the source code is not avaiable.
> >
> >The kit was developed for amateurs and others to take advantage of a low
> >cost DGPS Reference Station. Proceeds from the sale of the DGPS Ref Sta
> >support other TAPR projects, most notibly, the FHSS Radio.
>
> I am not looking for a bargin, but am trying to roll my own DGPS reference
> station. I am new to programming and look for projects to advance my
> skills. I guess I am doing what hams used to do years ago when they made
> their own gear. I thought someone here might be able to help me with an
> area that I didn't understand. I'll find the answer somewhere else.
>
>
> 73
> Mark Miller
> N5RFX
>
> ---
> You are currently subscribed to tacgps as: CURETON@TRSMPD01ME.NTC.NOKIA.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to ss as: W9DDD@TAPR.ORG
> To unsubscribe send a blank email to leave-ss-4753A@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

74. [tacgps] Re: Modified Z-Count

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 29 Mar 1999 22:18:49 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13071-1999.03.29-21.21.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 06:58 PM 3/29/99 -0600, you wrote:
>I would expect the authors would be given commercial rights
>to the code, so no, I doubt the Source will ever be released.
>
>>Does this mean that the source code for the FHSS radio will not be
>available
>>for others to experiment with? Not even the 360 RTOS?

My goodness, this thread is getting way off...

It is not TAPR policy to compel an author to withhold or give away the
source code to a project. Each project is treated separately on a
case-by-case basis.

In the case of the FHSS, the source code is already out there! It is XINU.
 You can buy the Douglas Comer textbook today! Take a look at

    http://www.cs.purdue.edu/homes/dec/osbooks.html

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

75. [tacgps] Re: Modified Z-Count

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Tue, 30 Mar 1999 07:16:00 +0300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13078-1999.03.29-22.22.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This probably should be in the SS SIG but I feel I should indicate what
prompted my original question. My apologies to those who disinterested in
this thread and I would recommend that all replies be sent to the SS SIG.

An except for the FHSS Feb '98 update:

"The project team has decided to do all development around XINU, since the
full source is freely available and meets the needs of the project. As of
this writing, the software group has ported the code to the CPU board and is
currently testing and debugging."

An except for the FHSS June '98 update:

"The basic kernel is operational on the board, with the exception of the
Ethernet driver module. The serial, timer, and several other modules have
had to be rewritten from the
ground up. It is expected the the ethernet driver may take 2 months to fully
rewrite and get functional, since the manner in which the kernel handles the
buffers might have to be
optimized for our processor. As was discussed last issue, we have acquired a
copy of XINU (a preemptive multitasking, prioritized scheduler) and a
full-blown TCP/IP stack
based on the design in the books by Doug Comer. We have to change the
assembly modules, and port the code over from a SUN 3 workstation to the
68360 design. The total
RTOS/STACK design is 630 different software code modules! Once the
kernel/stack is operation, then we actually have to write the radio code.
The Software Development
Systems Inc (SDS) development tools have worked out very good. The tools
include a Crosscode complier suite and singlestep on chip debugger."

Sounds like significant work has gone into getting the XINU OS operating on
the Motorola 68360 processor. Not something the average Jo would have the
time to do!

From: Steven R. Bible
To: TAPR Special Interest Group
Subject: [tacgps] Re: Modified Z-Count
Date: Tuesday, 30 March, 1999 6:18AM

At 06:58 PM 3/29/99 -0600, you wrote:
>I would expect the authors would be given commercial rights
>to the code, so no, I doubt the Source will ever be released.
>
>>Does this mean that the source code for the FHSS radio will not be
>available
>>for others to experiment with? Not even the 360 RTOS?

My goodness, this thread is getting way off...

It is not TAPR policy to compel an author to withhold or give away the
source code to a project. Each project is treated separately on a
case-by-case basis.

In the case of the FHSS, the source code is already out there! It is XINU.
You can buy the Douglas Comer textbook today! Take a look at

    http://www.cs.purdue.edu/homes/dec/osbooks.html

 - Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: CURETON@TRSMPD01ME.NTC.NOKIA.COM

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

76. [tacgps] Re: Modified Z-Count

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 29 Mar 1999 22:53:35 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13086-1999.03.29-23.03.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The FHSS radio code is all based on Xinu which is completely open source.

If you read the FHSS web page you will note that one of the most important features of the FHSS radio is that all the code will be available from the get go. (That isn't in the project updates, Tom talks about it in the paper and in several of the audio talks.)

You are correct in thinking that a LOT of work has gone into the project thus far and we still have a lot to do and we still need donations and people joining TAPR and other people buying things in order to conitune its developement as well as many other reallt next projects.

While the FHSS code isn't available now, because it isn't finished, but when it is -- you guys can just beat the hell out of it all you want.

Cheers - Greg Jones, WD5IVD
President TAPR

>I would expect the authors would be given commercial rights
>to the code, so no, I doubt the Source will ever be released.
>
>>Does this mean that the source code for the FHSS radio will not be
>available
>>for others to experiment with? Not even the 360 RTOS?
>>
>>Regards,
>>David
>
>
>

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

77. [tacgps] Spread Spectrum Radio....

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Tue, 30 Mar 1999 18:36:31 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13109-1999.03.30-01.42.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>From my reading of the USA export restrictions (and the Australian ones for that matter since they are just as bad) I believe that it would be illegal to publish enough information to allow me to reprogram the FHSS radio onto a different spreading pattern.

Since I assume that the spreading pattern is software derived, that therefore means that at least part of the code is not publishable... At least on the internet.

Darryl Smith Vk2TDS
Sydney, Australia

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

78. [tacgps] Re: Modified Z-Count

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Tue, 30 Mar 1999 06:31:33 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13124-1999.03.30-06.34.48--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The code in the book, like any project, is a starting point.

I suspect the radio software developer(s) had a lot of work
left, to work with the hardware they chose. Thus, that work
would have to be re-invented without publication/release.

Steve

-----Original Message-----

>In the case of the FHSS, the source code is already out there! It is XINU.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

79. [tacgps] Re: Spread Spectrum Radio....

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 09:23:08 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13158-1999.03.30-09.50.30--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The code for the spreading sequence isn't the code that is in XINU part of
the router. It is a FPGA device that controls the PLLs and some other RF
issues.

In theory the Stack(CPU) will send information to the FPGA and tell it when
to hop or how to hop.

Cheers - Greg

>>From my reading of the USA export restrictions (and the Australian ones
>for that matter since they are just as bad) I believe that it would be
>illegal to publish enough information to allow me to reprogram the FHSS
>radio onto a different spreading pattern.
>
>Since I assume that the spreading pattern is software derived, that
>therefore means that at least part of the code is not publishable... At
>least on the internet.
>
>Darryl Smith Vk2TDS
>Sydney, Australia
>
>
>---
>You are currently subscribed to tacgps as: WD5IVD@TAPR.ORG
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

-----
Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

80. [tacgps] RE: Modified Z-Count

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 09:45:04 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13160-1999.03.30-09.50.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>At 05:18 PM 3/28/99 -0500, Steve, N7HPR wrote:
>>Not really knowing what you guys are up to, and hazarding beating a dead
>>horse...
>>

>>The TAPR DGPS Ref Station already does the things you guys mention above.
>>It takes the Motorola binary and converts it to RTCM Type 1 message.
>
>Yes Steve, I am familiar with the TAPR kit for $179.00. Does that include a
>copy of the source code for the PIC?

Hi Mark.

The code for the DGPS project is not available. Steve Bible, N7HPR, author of the code and designer of the DGPS along with Doug McKinney, allows TAPR to use the code in the DGPS kit that TAPR makes available. Steve hasn't released his DGPS code because he has also been pursuing commercial avenues with his project.

I think someone has already commented about software release for TAPR projects. They are on a case by case basis. They have to be these days. I feel very strongly that when an author or designer approaches TAPR we want to ensure that we don't limit their future commercial possibilities, but on the other hand we want to make sure that the TAPR membership can benefit and also contribute back to whatever is brought to the organization to do. The key to this is usually trying to represent the amateur radio/educational markets for the author or designer that comes to TAPR with a project for us to do.

The key issue for TAPR is one of trying to make things available to the amateur radio, educational, experimental communities. This sometimes means to do so that the code from the author remains closed until the author feel that it could be released. As with the FHSS radio project, DSP-93, and PIC-E, and several other TAPR projects the majority of the code is made available that allows the user to build their own modules or whatever from the code released.

The example that most people don't know is the TNC-2. TAPR never owned the license to the AX.25 code and interface running in the TNC-2. The author was kind enough to give TAPR a free use license since it was a joint effort to develop the hardware and software. TAPR then benefited from being able to license the executable along with the hardware when a commercial interest showed. This partnership generated whatever knows to do as packet radio. MFJ, AEA, PacComm, and many other benefited from the ability to license hardware and firmware from TAPR, but then be able to hire the author as a consultant to enhance their product. TAPR made money selling the license and making royalities (before 1989 now) and the author developed a commercial channel for his development. Also, the amateur radio community benefited.

While in a perfect world it would be great to release all code to everyone, authors have to make the decision individually if doing so risks any potential commercial profit from their hard work.

This decision has to be balanced one. By releasing into the amateur community the authors in many cases can be greatly assisted in both technical feedback and testing as well as introducing their work to a big cross section of potential customers later in a commercial venture. It is my job and others in TAPR to work with new projects when they appear and try to determine what the best approach is for getting the technology into the organization while at the same time making the author happy with future possibilities.

Anyway, I hope that this shares a little of the daily juggling I have to do at TAPR to bring interesting kits and projects to the membership and the amateur community at large.

It isn't a perfect world, so we just have to make do with what we have and enjoy what is in front of us.

Cheers - Greg Jones, WD5IVD
President TAPR

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

81. [tacgps] GPS-30 OEM not functional...

From: " stéphane rivière " <stephane.riviere@wanadoo.fr>
Date: Tue, 30 Mar 1999 15:11:59 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13174-1999.03.30-10.51.17--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi from France,

First, I want to apologize, it's not really the right place to ask about my problem...

I'm a french TAPR member who bought almost two years ago a Garmin GPS-30 oem at TAPR.

It was a low cost unit, a special offer. The unit never worked.
I was aware when I bought it there is probably a trick inside.
This was the reason this unit was sold at a very low price.
I knew the was a fix but can't today retrieve it.

Is there somebody here who can help me telling why I must do...
I've done the hard part : open the box without damaging the active unit.

The unit is functionnal (cpu & serial link point of view) but no GSP info at all.

I remember there is something to resold, but can't remember what.
I've not find any pages on www.tapr.org... It's an old story now.

Many thanks.

Sorry for my english.

73 de F1USA, Stephane (Oleron Island - France)

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

82. [tacgps] Re: GPS-30 OEM not functional...

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 11:35:13 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13175-1999.03.30-11.42.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

We had some pages up on the GPS-30 and a look at how to take it a part.
When I redid the web pages the first of the year, they got removed.

I'll try to add them back today or tomorrow.

When it is back, it will appear in the kits section under dicontinued.

You might also take a look at the archives. There were several messages
about fixes.
http://www.tapr.org/cgi-bin/wilma/tacgps

I think we handled the GPS-30 issues on this list. I am sure there are
some people on the list that can help as well/

Good luck.

Cheers - Greg

>Hi from France,
>
>First, I want to apologize, it's not really the right place to ask about
>my problem...
>
>I'm a french TAPR member who bought almost two years ago a Garmin GPS-30
>oem at TAPR.
>
>It was a low cost unit, a special offer. The unit never worked.
>I was aware when I bought it there is probably a trick inside.
>This was the reason this unit was sold at a very low price.
>I knew the was a fix but can't today retrieve it.
>
>Is there somebody here who can help me telling why I must do...
>I've done the hard part : open the box without damaging the active unit.
>
>The unit is functionnal (cpu & serial link point of view) but no GSP info
>at all.

>
>I remember there is something to resold, but can't remember what.
>I've not find any pages on www.tapr.org... It's an old story now.
>
>Many thanks.
>
>Sorry for my english.
>
>73 de F1USA, Stephane (Oleron Island - France)
>
>
>
>---
>You are currently subscribed to tacgps as: WD5IVD@TAPR.ORG
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

-----
Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

83. [tacgps] RE: Modified Z-Count

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 30 Mar 1999 13:21:00 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13180-1999.03.30-12.23.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, if nobody else is going to say it, I will. It seems to me that
$179 for a small circuit board with a $5 PIC on it
to translate DGPS data from one serial protocol to another is outrageous.
Especially for a "non-profit" organization
as TAPR. There must be $150 profit per board!!! Where and to whom is all tihis
money going?
  Jim Korenz N8PXW

bounce-tacgps-5599@lists.tapr.org on 03/30/99 09:50:50 AM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] RE: Modified Z-Count

>At 05:18 PM 3/28/99 -0500, Steve, N7HPR wrote:
>>Not really knowing what you guys are up to, and hazarding beating a dead
>>horse...
>>
>>The TAPR DGPS Ref Station already does the things you guys mention above.
>>It takes the Motorola binary and converts it to RTCM Type 1 message.
>
>Yes Steve, I am familiar with the TAPR kit for $179.00. Does that include a
>copy of the source code for the PIC?

Hi Mark.

The code for the DGPS project is not available. Steve Bible, N7HPR, author
of the code and designer of the DGPS along with Doug McKinney, allows TAPR
to use the code in the DGPS kit that TAPR makes available. Steve hasn't
released his DGPS code because he has also been pursuing commercial avenues
with his project.

I think someone has already commented about software release for TAPR
projects. They are on a case by case basis. They have to be these days.
I feel very strongly that when an author or designer approaches TAPR we
want to ensure that we don't limit their future commercial possibilities,
but on the other hand we want to make sure that the TAPR membership can
benefit and also contribute back to whatever is brought to the organization
to do. The key to this is usually trying to represent the amateur
radio/educational markets for the author or designer that comes to TAPR
with a project for us to do.

The key issue for TAPR is one of trying to make things available to the amateur radio, educational, experimental communities. This sometimes means to do so that the code from the author remains closed until the author feel that it could be released. As with the FHSS radio project, DSP-93, and PIC-E, and several other TAPR projects the majority of the code is made available that allows the user to build their own modules or whatever from the code released.

The example that most people don't know is the TNC-2. TAPR never owned the license to the AX.25 code and interface running in the TNC-2. The author was kind enough to give TAPR a free use license since it was a joint effort to develop the hardware and software. TAPR then benefited from being able to license the executable along with the hardware when a commercial interest showed. This partnership generated whatever knows to do as packet radio. MFJ, AEA, PacComm, and many other benefited from the ability to license hardware and firmware from TAPR, but then be able to hire the author as a consultant to enhance their product. TAPR made money selling the license and making royalities (before 1989 now) and the author developed a commercial channel for his development. Also, the amateur radio community benefited.

While in a perfect world it would be great to release all code to everyone, authors have to make the decision individually if doing so risks any potential commercial profit from their hard work.

This decision has to be balanced one. By releasing into the amateur community the authors in many cases can be greatly assisted in both technical feedback and testing as well as introducing their work to a big cross section of potential customers later in a commercial venture. It is my job and others in TAPR to work with new projects when they appear and try to determine what the best approach is for getting the technology into the organization while at the same time making the author happy with future possibilities.

Anyway, I hope that this shares a little of the daily juggling I have to do at TAPR to bring interesting kits and projects to the membership and the amateur community at large.

It isn't a perfect world, so we just have to make do with what we have and enjoy what is in front of us.

Cheers - Greg Jones, WD5IVD
President TAPR

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

84. [tacgps] RE: Modified Z-Count

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Tue, 30 Mar 1999 13:10:04 -0500 (EST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: lerman@lerman.nai.net (Kenneth Lerman)
Message-ID: <LYR6754-13184-1999.03.30-12.31.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> Well, if nobody else is going to say it, I will. It seems to me that
> $179 for a small circuit board with a $5 PIC on it
> to translate DGPS data from one serial protocol to another is outrageou=
> s.
> Especially for a "non-profit" organization
> as TAPR. There must be $150 profit per board!!! Where and to whom is al=
> l tihis
> money going?
>   Jim Korenz N8PXW

I suspect that you are off quite a bit on your profit estimate.

But it IS outrageous to spend $179 for a board when I have a perfectly
good system with some spare serial ports (running Linux) which could
perform be used to run my reference station along with all of the
other things it does.

Of course, I would still need to power the GPS board and convert its
ttl signals to RS-232.

Ken

>
>
>
>
>
> bounce-tacgps-5599@lists.tapr.org on 03/30/99 09:50:50 AM
> Please respond to tacgps@lists.tapr.org @ INTERNET
> To: tacgps@lists.tapr.org @ INTERNET
> cc:
> Subject: [tacgps] RE: Modified Z-Count
>
> >At 05:18 PM 3/28/99 -0500, Steve, N7HPR wrote:
> >>Not really knowing what you guys are up to, and hazarding beating a d=
> ead
> >>horse...
> >>
> >>The TAPR DGPS Ref Station already does the things you guys mention ab=
> ove.
> >>It takes the Motorola binary and converts it to RTCM Type 1 message.
> >
> >Yes Steve, I am familiar with the TAPR kit for $179.00. Does that incl=
> ude a
> >copy of the source code for the PIC?
>
> Hi Mark.
>
> The code for the DGPS project is not available. Steve Bible, N7HPR, au=
> thor
> of the code and designer of the DGPS along with Doug McKinney, allows T=
> APR
> to use the code in the DGPS kit that TAPR makes available. Steve hasn'=
> t
> released his DGPS code because he has also been pursuing commercial ave=
> nues
> with his project.
>
> I think someone has already commented about software release for TAPR
> projects. They are on a case by case basis. They have to be these day=
> s.
> I feel very strongly that when an author or designer approaches TAPR we=
>
> want to ensure that we don't limit their future commercial possibilitie=
> s,
> but on the other hand we want to make sure that the TAPR membership can=
>
> benefit and also contribute back to whatever is brought to the organiza=
> tion
> to do. The key to this is usually trying to represent the amateur
> radio/educational markets for the author or designer that comes to TAPR=
>
> with a project for us to do.
>
> The key issue for TAPR is one of trying to make things available to the=
>
> amateur radio, educational, experimental communities. This sometimes m=
> eans
> to do so that the code from the author remains closed until the author =
> feel
> that it could be released. As with the FHSS radio project, DSP-93, and=
>
> PIC-E, and several other TAPR projects the majority of the code is made=
>
> available that allows the user to build their own modules or whatever f=
> rom
> the code released.
>
> The example that most people don't know is the TNC-2. TAPR never owned=

> the
> license to the AX.25 code and interface running in the TNC-2. The auth=
> or
> was kind enough to give TAPR a free use license since it was a joint ef=
> fort
> to develop the hardware and software. TAPR then benefited from being a=
> ble
> to license the executable along with the hardware when a commercial
> interest showed. This partnership generated whatever knows to do as pa=
> cket
> radio. MFJ, AEA, PacComm, and many other benefited from the ability to=
>
> license hardware and firmware from TAPR, but then be able to hire the
> author as a consultant to enhance their product. TAPR made money selli=
> ng
> the license and making royalities (before 1989 now) and the author
> developed a commercial channel for his development. Also, the amateur
> radio community benefited.
>
> While in a perfect world it would be great to release all code to every=
> one,
> authors have to make the decision individually if doing so risks any
> potential commercial profit from their hard work.
>
> This decision has to be balanced one. By releasing into the amateur
> community the authors in many cases can be greatly assisted in both
> technical feedback and testing as well as introducing their work to a b=
> ig
> cross section of potential customers later in a commercial venture. It=
> is
> my job and others in TAPR to work with new projects when they appear an=
> d
> try to determine what the best approach is for getting the technology i=
> nto
> the organization while at the same time making the author happy with fu=
> ture
> possibilities.
>
> Anyway, I hope that this shares a little of the daily juggling I have t=
> o do
> at TAPR to bring interesting kits and projects to the membership and th=
> e
> amateur community at large.
>
> It isn't a perfect world, so we just have to make do with what we have =
> and
> enjoy what is in front of us.
>
> Cheers - Greg Jones, WD5IVD
> President TAPR
> -----
> Greg Jones, WD5IVD Austin, Texas
> wd5ivd@tapr.org http://www.tapr.org/~wd5ivd
>
>
>
> ---
> You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
> =
>
> ---
> You are currently subscribed to tacgps as: LERMAN@LERMAN.NAI.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

--
Kenneth Lerman Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited Fax: (203)426-9138
55 Main Street Voice: (203)426-4430
Newtown, CT 06470 http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

85. [tacgps] RE: Modified Z-Count

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 13:11:23 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13204-1999.03.30-13.36.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I suspect that you are off quite a bit on your profit estimate.
>
>But it IS outrageous to spend $179 for a board when I have a perfectly
>good system with some spare serial ports (running Linux) which could
>perform be used to run my reference station along with all of the
>other things it does.
>
>Of course, I would still need to power the GPS board and convert its
>ttl signals to RS-232.
>

Isn't that the great thing about amateur radio.

There are all sorts of ways to accomplish something.

Why be outraged when you have a solution that will do what you want it to.

Cheers - Greg

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

86. [tacgps] RE: Modified Z-Count

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 13:33:02 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13205-1999.03.30-13.36.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Well, if nobody else is going to say it, I will. It seems to me that
>$179 for a small circuit board with a $5 PIC on it
>to translate DGPS data from one serial protocol to another is outrageous.
>Especially for a "non-profit" organization
>as TAPR. There must be $150 profit per board!!! Where and to whom is all tihis
>money going?

Let's not forget a few extra expenses.

1. Mfg of the unit by a contract mfg
2. Shipping from one place to the other
3. Visa and Office expenses in order to make these available
4. Office Rent
5. Buying the parts
6. The hours and amount of research it took to make it into a final unit
7. The box it comes in the stuffing in the box
8. Shipping the unit UPS or International Air Mail

While you might think that the unit is $15 or less, it isn't. Every thing
TAPR does takes on a part in paying these bills.

Then the developers get money from each sale of a DGPS. That is their
reward for developing something unique and spending several hundred hours
working to make it into a final kit that is reproducible so that the
membership can benefit. (Maybe you can develop something similar and make
the PIC code freely available so we can put it on the board for a lot less
to the membership ?)

After those issues are taken into account TAPR makes some profit on top of
that.

Yes, it is a good profit margin on this unit, but then again we don't sell
tons of them. Keep in mind that the closest commercial version of this

sells for around $1000. Which is a better deal.

Let's say we drop the price so that we made $15 a unit profit, do you think
the amount of sales would increase such that the lose in profit would be
recovered ? Based on the analysis I do on each unit that TAPR makes
available the DGPS would not.

While TAPR is non-profit group that doesn't mean that specific items don't
make money. Kits and Publications are required to generate profit enough to
support all the things that don't make any money or lose money.   Which is
a lot of things we do.

Like -- that TAPR server and this list software, or support to ongoing
research, or buying the software in order to turn the DCC and PSR into
CD-ROM and web pages in the coming year, or the several projects we fund
that don't ever make it to a final kit. Those take money and many of them
never generate profit from the investment.

Non-profit (501c3) means that the board of directors (which I am one) do
not get paid for being a board member. I gladly donate my 30-40hours a
week to run the organization and manage various TAPR projects while I work
full time and complete my PhD at the Univ of Texas.

If you want to change things, then my suggestion would be to put your name
in the hat for the board election next year. Election nomination deadline
will be Dec 31st. We have three positions up for election each year. Ever
TAPR member is welcome to nominate themselves or someone else.

If you have further questions, please feel free to e-mail me.

Cheers - Greg Jones, WD5IVD
Pres TAPR

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

87. [tacgps] Re: RE: Modified Z-Count

From: paul@eye.psych.umn.edu (Paul Beckmann)
Date: Tue, 30 Mar 1999 15:26:11 -0600 (CST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13221-1999.03.30-15.26.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well said, Greg! I hope the message gets through. 501c3 is very difficult
for some people to understand. I for one have always marvelled at your
dedication to TAPR, especially given the fact that, until just a year ago,
I was in your exact employment/academic situation. I did defend a year
ago and have been working for a consulting firm. In a month I'll be starting
my own (1-man) firm. It's a long road but I think it'll prove to be worth it.

How are you doing on your program? U Austin is the home of Bill Geisler,
a Psych professor whose research I based my thesis research on. Hope
this message finds you (generally) well--and now a little more vented.

Best 73's
--Paul Beckmann, wa0rse@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

88. [tacgps] Garmin GPS-25 Price Drop

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 16:39:26 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: " PSR "<psr@tapr.org>
Message-ID: <LYR6754-13229-1999.03.30-16.43.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR has been able to drop the price of the Garmin GPS-25 OEM recv by $49.

The price for the GPS-25 in single Qty is now:
        Member Price: $135

Non-Member Price: $150

Check http://www.tapr.org/tapr/html/Fgps25.html for further details.

Cheers - Greg, WD5IVD

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
---
e-mail: tapr@tapr.org web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000 fax: 940-565-2544

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

89. [tacgps] Modified Z count REALLY!

From: mdmiller@eaze.net
Date: Tue, 30 Mar 1999 20:33:07 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13279-1999.03.30-20.36.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Geez, I didn't mean to create such a fuss. The only thing I was looking for was an answer to my origional question. Which was (if any one remembers) what is the modified Z count in the header of an RTCM SC 104 type one message.

Well after doing some research and some monitoring here is the answer.

<modified z_count> is the reference time of the corrections in the message in seconds within the current hour. Note that it is the current hour in GPS time, which is several seconds ahead of UTC (13 in 1999).

This comes from http://www.wsrcc.com/wolfgang/gps/dgps-ip.html and his wonderful DGPS hack. Wolfgang has an IP RTCM extension cord that lets you monitor DGPS beacon signals from the West Coast. We don't have a Coast Guard beacon here in Arlington TX, so I really appreciate Wolgang's GNU software. Perhaps you are interested in GNU I encourage you to check out http://www.gnu.org/, especially after the discussion that went on here with my thread.

My question arose from the fact that the Motorola VP Oncore GPS time resolution in the @@Ce message is .1 seconds and the RTCM modified Z count resolution is .6 seconds. After monitoring the VP for awhile I see that the GPS time in the @@Ce message (when output at 1 second intervals) requires only 1 second resolution. So I am not sure yet if this is what I should be using for the modified Z count. I'll have to do some more research.

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

90. [tacgps] RE: Complaints about the DGPS kit

From: Jeff Vollin <barnie@flash.net>
Date: Tue, 30 Mar 1999 21:18:20 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13288-1999.03.30-22.22.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Response to JIM KORENZ (below):

So just don't buy it. I find it amazing that someone sophisticated enough to read this list actually thinks a product should be sold for the cost of its materials. That is a ridiculous notion when you are dealing with low-volume, specialty items like the DGPS board.
I for one am EXTREMELY grateful to TAPR and Steve for making this kit available to us at a cost that I can justify for a hobby. I have gotten many educational hours from this kit and I have many plans

for more future experiments. Yes, it might be nice to see the source,
but the reality of it is, I don't have the time to spend plowing through
lines of PIC assembly just to learn how to reformat a data stream. I
am much happier to take this little gem and learn about the really
interesting stuff like GPS errors, receiver noise, autocorrelation and
Kalman time constants, etc.
  PLEASE, TAPR and potential project developers, we do like your
work, do keep it coming. I, for one, will continue to support your efforts.

Dr. Jeff Vollin
KC6WFU

JIM KORENZ wrote:

> Well, if nobody else is going to say it, I will. It seems to me that
> $179 for a small circuit board with a $5 PIC on it
> to translate DGPS data from one serial protocol to another is outrageous.
> Especially for a "non-profit" organization
> as TAPR. There must be $150 profit per board!!! Where and to whom is all tihis
> money going?
>   Jim Korenz N8PXW
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

91. [tacgps] Internet DGPS Support

From: Robert Winingham <kc5ejk@onramp.net>
Date: Tue, 30 Mar 1999 22:26:40 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13290-1999.03.30-22.29.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>This comes from http://www.wsrcc.com/wolfgang/gps/dgps-ip.html and his
>wonderful DGPS hack. Wolfgang has an IP RTCM extension cord that lets you
>monitor DGPS beacon signals from the West Coast. We don't have a Coast
>Guard beacon here in Arlington TX, so I really appreciate Wolgang's GNU
>software. Perhaps you are interested in GNU I encourage you to check out
>http://www.gnu.org/, especially after the discussion that went on here with
>my thread.

For Mac users who want to try Internet DGPS Support.
See GPSy Pro and Internet DGPS Support at www.gpsy.com

But now there is a totally free service: Internet DGPS. The brainchild of XXX YYY,
this new service allows free broadcast of USCG signals through the internet. Using
your computer as the beacon receiver, it gives your attached GPS unit the accuracy
and precision of DGPS. The pros are that it's free since it uses equipment you already
have. The cons are that you need to have the GPS unit hooked to your computer.
While this won't help hikers, it does help those with mobile internet connections
(boats or vehicles hooked to satellite TCP/IP or PPP connections) as well as
those using DGPS to run statistical analyses of the GPS array.

GPSy Pro and Internet DGPS Support

How to use Internet DGPS:

  1) You *must* be connected to an Internet (TCP/IP) connection before launching GPSy
  2) Connect your GPS unit and set it to NMEAoutput with RTCM (DGPS) input at 4800 bps
       -- with a Garmin unit, set it to NMEA/RTCM mode
  3) Make sure GPSy Pro is in NMEA-0183 mode for real-time mode
  4) Open the new "Internet DGPS Monitor" window (Command-9)
      -- this will initiate the connection to the default DGPS host (dgps.wsrcc.com:2101)
      -- if you don't have a TCP/IP connection to the internet, the system will freeze (a bug)

   5) You should hear a beep and basic DGPS host information will pop-up, GPSy should now
        be sending DGPS data to your GPS unit. Check your GPS unit's satellite display to see if
        it now has a DGPS link. On Garmin units, satellites with differential corrections have
       a small "D" in the bar displays.

6) Voila. You now have Internet DGPS running

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

92. [tacgps] RE: Modified Z-Count

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 31 Mar 1999 04:42:05 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13325-1999.03.31-04.45.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Nobody is going to say that. It's a great kit!

Combined with the TAC32 software, it is a
solution that is better than any commercial
product, in price/performance.

Material cost has nothing to do with value.

Steve, K5OKC

-----Original Message-----
From: JIM KORENZ <jfkorenz@goodyear.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Tuesday, March 30, 1999 12:21 PM
Subject: [tacgps] RE: Modified Z-Count

> Well, if nobody else is going to say it, I will. It seems to me that
>$179 for a small circuit board with a $5 PIC on it

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

93. [tacgps] Re: DGPS Kit was Modified Z-Count

From: mdmiller@eaze.net
Date: Wed, 31 Mar 1999 04:55:08 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13326-1999.03.31-04.59.15--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lets change the name of this thread ok? I am getting excited that someone
has some new information on modified Z count without cause!

TAPR has great kits! I have purchased several over the last 8 or 9 years,
starting with the DCD state machine and the 9600 baud modem. And now we
have great stuff like TAC32 and TAC2...wow! I appreciate all of the hard
work that has gone into these kits. I am happy that the developers have a
pecuniary interest in these kits (everyone needs an incentive). I hope to
be a contributor some day myself. I have been on the engineering side and
the marketing side of product development. One thing I have learned, you
can't please all of the people all of the time. But you keep your ear
tuned to the customer to see what they want; because, it is the customer
that is going to buy your product.

Thanks again!

73
Mark
N5RFX

At 04:42 AM 3/31/99 -0600, Steve, K5OKC wrote:
>Nobody is going to say that. It's a great kit!
>
>Combined with the TAC32 software, it is a

>solution that is better than any commercial
>product, in price/performance.
>
>Material cost has nothing to do with value.
>
>Steve, K5OKC
>
>-----Original Message-----
>From: JIM KORENZ <jfkorenz@goodyear.com>
>To: TAPR Special Interest Group <tacgps@lists.tapr.org>
>Date: Tuesday, March 30, 1999 12:21 PM
>Subject: [tacgps] RE: Modified Z-Count
>
>
>> Well, if nobody else is going to say it, I will. It seems to me that
>>$179 for a small circuit board with a $5 PIC on it
>
>
>
>---
>You are currently subscribed to tacgps as: MDMILLER@EAZE.NET
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
Regards
Mark Miller

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

94. [tacgps] Re: Tapr spirit

From: " stéphane rivière " <stephane.riviere@wanadoo.fr>
Date: Wed, 31 Mar 1999 15:13:31 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13336-1999.03.31-07.20.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All...

> Well, if nobody else is going to say it, I will. It seems to me that
> $179 for a small circuit board with a $5 PIC on it
> to translate DGPS data from one serial protocol to another is outrageous

Right, tapr kits are not really cheap.
I agree, this one looks very expensive.

But good design has a cost...
Quality kits and free support has a cost...
Keeping Tapr spirit alive has also a cost...

Serious Ham research corporations are very rare.
I'm proud to be a tapr member.

In France we used to say (may be in the US too) :
Critisism is easy, Art is difficult.

73 de F1USA, Stéphane (Oleron island - France)

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

95. [tacgps] Re: Modified Z-Count

From: "Martin Boissonneault (E-mail)" <ve2mrx@iname.com>
Date: Wed, 31 Mar 1999 22:48:29 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13439-1999.03.31-21.51.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All!
        Just wanted to clarify to you all my personal reasons to write this piece
of RTCM type 1 message generating program...

First, I will be writing this using (old) QuickBasic. So it will run on old machines. We have plenty of those, do we?

I do not want to mobilize ~100$ on a piece of hardware when an old 'puter can do it. Just needs some software!

I WANT to send the output to all of you who request it, over the local air waves.

I want to lower the price of "personal" DGPS stations. (Is 20$US good for you?)

Of course, I am not there yet... It's coming, most modules are already written. I have to write the module to get decoded VP Oncore messages to the RTCM words, and test everything locally with a borrowed GPS... I will then know if my parity coding module works...

Then... Beta tests!!!

Another msg. will be sent then...

Thanks everyone...

Martin VE2MRX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

April 1999

Original source file: tacgps.9904
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9904

1. [tacgps] Garmin-20, turn off things, how?

From: "Larry Kayser" <kayser@rideau.net>
Date: Sun, 4 Apr 1999 14:7:19
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13965-1999.04.04-14.10.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is there any way to turn off all the "other" lines from this receiver, I
only want the $GPGGA line to get the clock and hate to waste cycles
dumping
all the other material as the PC doing the work is old and slow and there
is much else to do.

Please email me at kayser@rideau.net if there is anyway to do this.

I have already spent several hours trying to find an online manual for
this
RX, so that might help as well if there was one somewhere.

Also is there any way to get Year, Month, Day out of this receiver? Again
I can not see this info by inspection of the data coming in.

Thanks in advance

Larry, VA3LK

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] Re: Garmin-20, turn off things, how?

From: Gary Sanders <gsanders1@earthlink.net>
Date: Sun, 04 Apr 1999 17:56:12 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-13993-1999.04.04-16.59.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Contact Garmin Tech Support and ask them to email you a copy
of a couple of programs called "GPSCFG.EXE" and "NMEAVWR.EXE".
They are small, and don't take long to send.

The program "GPSCFG.EXE" will do exactly what you want to do
in a simple Windows based program, while "NMEAVWR.EXE" is a
DOS program.

I've been told there are other ways, but I've never been able
to get the other ways to work for me.

Gary Sanders

Larry Kayser wrote:
>
> Is there any way to turn off all the "other" lines from this receiver, I
> only want the $GPGGA line to get the clock a
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] Re: Garmin-20, turn off things, how?

From: " stéphane rivière " <stephane.riviere@wanadoo.fr>
Date: Mon, 5 Apr 1999 12:16:16 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14205-1999.04.05-14.15.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi from France,

>The program "GPSCFG.EXE" will do exactly what you want to do
>in a simple Windows based program, while "NMEAVWR.EXE" is a
>DOS program.

I don't know if my suggestion is appropriate but... FYI

I have an old pc dos rs232 sniffer.
It works perfectly on a... 6 MHz PC/AT...
Just need a special cable (very easy to make from a standart cable)
And 2 serial ports.

I still have the original shareware release, full functional, with docs and cable schematics.

You could "analyse" the data exchange in order to learn, maybe, some hidden commands...

73 de F1USA, stephane (Oleron Island - France)

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Thank You everyone...

From: Larry Kayser <kayser@rideau.net>
Date: Mon, 05 Apr 1999 21:34:16 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14253-1999.04.05-20.38.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Wow! 24 Hours and the need is resolved, the Garmin GPS-20 is working,
happily giving me the $GPRMC line once a second. This line has both the
date and the time - my needs are now meet and I can put it all in a box and
consider this little project finished work.

Thank You to Dave Martindale, Gary Saunders, Jim Miller, and the Tech staff
at Garmin. Each of you played a critical part in getting this little
project resolved.

A few points that anyone might pass on to others, the commands to the GPS-20
must be followed by a CR and LF, best done from a simple terminal program
with a Control M followed by a Control J. Once that little breakthrough
was learned, two of the messages told me to be careful, everything else went
very quickly.

Now those who are looking for signals from a project here can be sure that
the signals left here consistently within a few milliseconds of the agreed
time without having to try and set a PC Clock over a MODEM connection every
day or so. The date information will allow full automagic recovery from
power outages which has been a long time desired capability.

My thanks to each of you.

73 es Thanks

Larry, VA3LK

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: Thank You everyone...

From: Robert Winingham <kc5ejk@onramp.net>
Date: Mon, 5 Apr 1999 23:12:02 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14264-1999.04.05-23.14.59--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>happily giving me the $GPRMC line once a second. This line has both the
>date and the time - my needs are now meet

Just for grins look up the meaning of the RMC in $GPRMC

73

----- kc5ejk@onramp.net or kc5ejk@amsat.org -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Numbers, darned numbers.....

From: Larry Kayser <kayser@rideau.net>
Date: Wed, 07 Apr 1999 21:53:00 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14616-1999.04.07-20.57.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greetings:

Having a Garmin GPS-20 happily filling up a harddisk at the rate of some 6 megabytes a day I took a few hours and looked at the numbers that were coming in - explicitly the Lat and Long.

I first examined the numbers to see if we had any outlyers and after some tests found that all the excursions of the lat and long were smooth and the data was wonderfully consistent. After looking at the numbers however I have some need of some mentoring from one of the members of this list.

As I examined the numbers I have come to sense that the numbers are just a little to far apart from the max to the min, beyond what I expected. Are my expectations real? Well maybe not but that is the end question so let me digress for a moment.

These Lat and Long figures are from a 24 hour + a bit sample of some 87000 seconds, surely the numbers should be significant in such a sample, but that might also be a question maybe.

My Lat is determined to be 4439.7891 min and 4440.3038 max and the Long is 7622.7170 min and 7623.6471 max. The differences are .6147 with an average of .3074 for the Lat and the Long difference is .9301 for an average of .4650. Just for fun I sent the ancient 386sx away for a while to calculate the real average and the difference is in the noise, for that at least I am glad - everything seems to be following a nice Normal curve.

>From my rule of thumb book, a degree is ~~70 Miles, then one minute is 1.2 miles and 1 second is about 100ft at the equator. Again, my rule of thumb book may be out of date but if it is not.... At my Latitude a second is then about 50 ft.

I also have no idea what the chap who is pushing the numbers into the system to manage the SA, but assuming nothing drastically out of the norm, ie nothing in the press about any issues, lets assume that the SA is normal.

For this location then the (my word) jitter is say 18 seconds for the Lat and again 27 seconds for the Long. These look to me to be a little beyond what I was expecting, for say worst case of about 8 seconds of error. The real figures are 2 to 3 times this amount of error - thus my long wordy request for some mentoring.

Am I expecting to much? The goal here is to understand more about what the numbers mean and are they reality. Does this older Receiver have some limitations? Am I looking at the numbers the wrong way? Your comments will be appreciated.

This is truely an academic request as my real interest in the GPS unit is to get the date and time to run a radio experiment. The unit will be some 10 to 15 miles away from here, so the transmitter will be just below killing the receiver level hi.

73, Larry, VA3LK

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] Numbers, darned numbers.....

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Thu, 08 Apr 1999 17:48:29 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

Message-ID: <LYR6754-14665-1999.04.08-01.56.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

G'Day....

You should be happy with those numbers. I had a GPS-20 on a friends car.
He was driving round Sydney, beaconing. I missed some beacons and then
found him on the northern tip of Tasmania (The Island at the south east
of Australia), well over 1000 kM away.... And I have had the GPS move
it's position by 50 kM more than once, also whilst mobile...

These are single channel units, and I must assume that they are best
suited for use on the water where the horizon is much better than in
major cities...

I have found the results from my Oncores far better. They have an
occasional problem whilst mobile but not too far. The Garmin GPS-12 is
even better....

Darryl Vk2TDS
Sydney, Australia

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: Numbers, darned numbers.....

From: Dave Martindale <davem@cs.ubc.ca>
Date: Thu, 8 Apr 1999 00:16:45 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14667-1999.04.08-02.19.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>My Lat is determined to be 4439.7891 min and 4440.3038 max and the Long is
>7622.7170 min and 7623.6471 max. The differences are .6147 with an average
>of .3074 for the Lat and the Long difference is .9301 for an average of
>.4650.

It sounds like you are treating the latitude and logitude strings in
the NMEA data as simple decimal numbers and averaging them. This isn't
going to yield the right numbers in general, though it probably doesn't
make a difference in your case.

The string "4439.7891" means 44 degrees, 39.7891 minutes. If you want to
convert this to decimal degrees (so you *can* do normal arithmetic
averaging), you need to take the 39.7891 part, divide by 60, and add
it to the 44. Alternately, to convert to decimal minutes, take the
44, multiply by 60, then add the 39.7891. Either way, you have to treat
the thing as two separate strings run together.

>For this location then the (my word) jitter is say 18 seconds for the Lat
>and again 27 seconds for the Long. These look to me to be a little beyond
>what I was expecting, for say worst case of about 8 seconds of error. The
>real figures are 2 to 3 times this amount of error - thus my long wordy
>request for some mentoring.

The spec for SA says +- 100 m, 95% of the time. That's about 3.25 seconds
of latitude and 4.55 seconds of longitude at your latitude. However, the
other 5% of the time it can be larger than that - potentially much larger
once in a while. If you discard the 5% of positions that are furthest
from the mean position, are the remaining ones within the published limits?
If so, you really can't complain.

However, your errors do seem larger than what I've see when I had a GPS 20.

Also, the quality of the received signal makes a substantial difference
in the position accuracy. A good active antenna with an unobstructed view
of the sky will generally give yield pretty accurate positions. A poor
antenna, giving marginal signal strength for most satellites, or a good
antenna positioned where substantial portions of the sky is blocked by
obstructions, will cause the receiver to give poorer positions. Weak
signals add noise to the position, while if parts of the sky are blocked
then geometry will sometimes be poor and errors can get large.

>Am I expecting to much? The goal here is to understand more about what the
>numbers mean and are they reality. Does this older Receiver have some
>limitations?

Yes, the GPS-20 is a single-channel multiplexing receiver. I once had

one, then later upgraded to the GPS-25. The latter gave more accurate
fixes. Even with SA, the 25's ability to track more satellites allows
it to produce better solutions most of the time. And with differential
GPS corrections, the 25 is considerably more accurate. In an hour of
collected data, the differentially-corrected GPS-20 gave positions with
a standard deviation of about 4 meters in lat/long. The GPS-25 gave
1.9 m latitude and 1.1 m longitude standard deviations. This suggests
to me that the 25 has less receiver noise. (The source of the DGPS
corrections is a Canadian Coast Guard station only a few km away).

>This is truely an academic request as my real interest in the GPS unit is to
>get the date and time to run a radio experiment. The unit will be some 10
>to 15 miles away from here, so the transmitter will be just below killing
>the receiver level hi.

If you just want the time to the nearest second, it should be fine.
If you use the 1 PPS output for microsecond-level timing, the large
position errors suggest that the timing might also be off by a couple
of microseconds from time to time (ahem). The 25 is apparently a much
more stable timing source than the 20 - see previous postings by Tom
Clark in this mailing list about timing performance of the 20 and 25.

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] TAPR Board of Directors Election Reminder

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Thu, 8 Apr 1999 12:30:22 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14724-1999.04.08-12.33.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a reminder to all TAPR members* that the TAPR Board of Directors
Election is happening until April 15th.

The current PSR supplied the necessary information for voting
electronically or via the mail.

If you don't know the web address or have lost your voter verification
number, then please send e-mail to tapr@tapr.org or call the TAPR office
(940) 383-0000 and Dorothy can supply you with the necessary information
for voting on-line.

The following people this year are running for the TAPR board of directors.

        Steve Bible, N7HPR
        Steve Dimse, K4HG
        Bob Hansen, N2GDE
        Steve Stroh, N8GNJ

Your vote as a member is important -- be sure to vote!

Cheers - Greg Jones, WD5IVD
President, TAPR

----
* membership current as of or before January 1, 1999 to be able to vote.

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
----
e-mail: tapr@tapr.org   web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000   fax: 940-565-2544

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Motorola or Garmin Antenna

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Fri, 9 Apr 1999 03:22:00 +0300

To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14781-1999.04.08-19.28.40--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,
        I am in the process of purchasing a Garmin-25 GPS unit from TAPR and
was wondering which antenna I should get. Motorola or Gamin?

I was unable to determine from the Garmin and TAPR web sites if the Garmin
antenna has an in-built LNA similar t the Motorola unit. As the Garmin is
more expensive than the Motorola product I would assume so.

Is there any significant differences in performance of the two units?

Regards,
David

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Re: Motorola or Garmin Antenna

From: Dan Hinz <dan.hinz@ieee.org>
Date: Thu, 08 Apr 1999 21:28:02 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14817-1999.04.08-23.34.03--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I don't know what your primary use of the GPS-25 will be, but if it is precision
timing,
I would recommend not getting it. I have the GPS-25 and it does fine for
positioning, but the time accuracy (as indicated by TAC32) has never been better
than about 400ns and is usually on the order of 500ns. I am using the Garmin
antenna and it does have an amplifier in it.

I have not used the motorola antenna so I can't comment on it. The only
potential problem I can think of would be if the two antennas are designed for
different power supplies. You will either have an antenna that doesn't amplify
or you'll burn it up.

73,
dan W6LSN

Once I free up some more discretionary funds, I'll be buying a Motorola GPS and
putting the Garmin in one of the vehicles.

Cureton David (NTC/MPD) wrote:

> Hi,
>   I am in the process of purchasing a Garmin-25 GPS unit from TAPR and
> was wondering which antenna I should get. Motorola or Gamin?
>
> I was unable to determine from the Garmin and TAPR web sites if the Garmin
> antenna has an in-built LNA similar t the Motorola unit. As the Garmin is
> more expensive than the Motorola product I would assume so.
>
> Is there any significant differences in performance of the two units?
>
> Regards,
> David
>
> ---
> You are currently subscribed to tacgps as: DAN.HINZ@IEEE.ORG
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Re: Motorola or Garmin Antenna

From: Kirk Alexander <kirk@Princeton.EDU>
Date: Fri, 09 Apr 1999 10:17:47 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14878-1999.04.09-09.21.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I bought the Motorola antenna listed on the TAPR for use with the TAPR
DGPSIB/Motorola Oncore VP and it works great. However I tried
connecting it to my Garmin GPS III Plus and the unit doesn't even
recognize that its there: in fact it makes reception worse.
--
Kirk Alexander
MGR, Multimedia Engineering Computation Atelier
School of Engineering and Applied Science
Princeton University
Princeton, NJ 08544
609-258-5420 (tel)
609-258-6744 (fax)
kirk@princeton.edu
http://www.princeton.edu/~kirk/

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] Re: Motorola or Garmin Antenna

From: "Pete Prossen" <prossen@znet.com>
Date: Fri, 9 Apr 1999 19:38:30 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-14956-1999.04.09-21.45.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Wow, I hope the new GPS III + upgrade I ordered doesn't have this problem.

My Mot antenna 97 worked quite well with my GPS III when it went on trips
with me.

Pete Prossen
WA6ZUH
prossen@znet.com

> From: Kirk Alexander <kirk@Princeton.EDU>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Subject: [tacgps] Re: Motorola or Garmin Antenna
> Date: Friday, April 09, 1999 7:17 AM
>
> I bought the Motorola antenna listed on the TAPR for use with the TAPR
> DGPSIB/Motorola Oncore VP and it works great. However I tried
> connecting it to my Garmin GPS III Plus and the unit doesn't even
> recognize that its there: in fact it makes reception worse.
> --
> Kirk Alexander
> MGR, Multimedia Engineering Computation Atelier
> School of Engineering and Applied Science
> Princeton University
> Princeton, NJ 08544
> 609-258-5420 (tel)
> 609-258-6744 (fax)
> kirk@princeton.edu
> http://www.princeton.edu/~kirk/
>
> ---
> You are currently subscribed to tacgps as: PROSSEN@ZNET.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Re: Motorola or Garmin Antenna

From: "Steven R. Bible" <srbible@gate.net>
Date: Sat, 10 Apr 1999 09:50:50 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15001-1999.04.10-08.53.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 03:22 AM 4/9/99 +0300, you wrote:
>Hi,
>   I am in the process of purchasing a Garmin-25 GPS unit from TAPR and
>was wondering which antenna I should get. Motorola or Gamin?
>
>I was unable to determine from the Garmin and TAPR web sites if the Garmin
>antenna has an in-built LNA similar t the Motorola unit. As the Garmin is

>more expensive than the Motorola product I would assume so.
>
>Is there any significant differences in performance of the two units?

David,

Yes, both the Motorola Antenna97 and Garmin GA-27 have amplifiers built in.
 Both require +5V to power them.

Kirk Mentioned:

>I bought the Motorola antenna listed on the TAPR for use with the TAPR
>DGPSIB/Motorola Oncore VP and it works great. However I tried
>connecting it to my Garmin GPS III Plus and the unit doesn't even
>recognize that its there: in fact it makes reception worse.

This shouldn't happen. Most, if not all, Garmin products send +5VDC up the
antenna line to power the amplifiers in the antenna. If there is a DC
block (i.e. capacitor) this will cause the amp to not be powered and yield
a poorer reception. Or maybe the GPS receiver has a problem sending +5VDC
out.

Both antennas have the same performance gain wise. The major differences
are physical.

The Garmin is mag or suction cup mount (you choose and it is
interchangable). And the antenna connection is an MCX connector.

The Motorola is mag mount only and it has a BNC connector. For many, if
you choose to use the Antenna97 with an OEM GPS receiver such as the Oncore
or Garmin GPS25, then you will need a MCX to BNC adapter.

TAPR sells a RF pigtail ($15.00) that has a MCX connector on one end of
RG-174. It's about 18" long. The other end is blank. The idea is that
the user decides what they want on the blank end. For example, you can buy
a bulkhead BNC connector and mount it on an enclosure. Then the Antenna97
plugs right into it.

Another idea is to purchase the GA-27. Cut the cable approximately 6" from
the MCX connector. Install a BNC bulkhead to the MCX side, and a BNC to
the antenna side. This allows you the flexablity of using a BNC connector
which is common on many GPS antennas. Thus you can exchange antennas with
friends :-).

The bottom line price wise: Antenna97 + RF pigtail = $80.00 (less 10%
member discount = $72.00). Garmin GA-27 = $75.00 (less 10% member discount
= 67.50).

Hope this helps.

73,

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Re: Motorola or Garmin Antenna

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Sat, 10 Apr 1999 15:18:24 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15007-1999.04.10-10.22.15--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dan Hinz wrote:
> I have not used the motorola antenna so I can't comment on it. The only
> potential problem I can think of would be if the two antennas are designed for
> different power supplies. You will either have an antenna that doesn't amplify
> or you'll burn it up.

Both Motorola and Garmnin have preamps. The both adhere to the de facto
industry standard of +5v at ~20 ma power fed thru the coax to power
the ~25-30 dB gain MMIC LNA that built into the antenna. Nearly all
remote antennas are amplified to deliver a fairly low noise figure

despite ~20 dB loss in the small coax.

Both should antennas work fine -- the Motorola has become my choice. The
Motorola is a bit cheaper from Rick Hambly   (http://www.cnssys.com)

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] Re: Motorola or Garmin Antenna

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Sat, 10 Apr 1999 15:32:37 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15011-1999.04.10-10.36.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kirk Alexander wrote:
>
> I bought the Motorola antenna listed on the TAPR for use with the TAPR
> DGPSIB/Motorola Oncore VP and it works great. However I tried
> connecting it to my Garmin GPS III Plus and the unit doesn't even
> recognize that its there: in fact it makes reception worse.

Hmmmm   .... works fine for me !

Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: Motorola or Garmin Antenna

From: Kirk Alexander <kirk@Princeton.EDU>
Date: Sun, 11 Apr 1999 13:19:34 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15249-1999.04.11-12.24.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I apologize for my erroneous comment! It turns out the Motorola Antenna
97 does indeed work with my Garmin GPS III Plus. After all your great
input I went and tried it again. My Antenna has the magnetic mount and
a regular BNC connector which goes right into the GPS III Plus. What I
learned is that the Antenna seems to function MUCH better if it's
sitting on top of a metal base plate or the roof of a car than if it's
just laying on the ground or even on a roof. I was testing it last
night with the TAPR DGPSIB and could watch the signal levels drop when I
removed it from a metal plate (sitting on my roof). I must have tested
it before under bad conditions.
--
Kirk Alexander
MGR, Multimedia Engineering Computation Atelier
School of Engineering and Applied Science
Princeton University
Princeton, NJ 08544
609-258-5420 (tel)
609-258-6744 (fax)
kirk@princeton.edu
http://www.princeton.edu/~kirk/

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] Re: Motorola or Garmin Antenna

From: "Ira A. Wilner" <bdcst@sover.net>
Date: Sun, 11 Apr 1999 18:06:02 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15337-1999.04.11-17.10.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Kirk Alexander <kirk@Princeton.EDU>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Sunday, April 11, 1999 1:22 PM
Subject: [tacgps] Re: Motorola or Garmin Antenna

>What I
>learned is that the Antenna seems to function MUCH better if it's
>sitting on top of a metal base plate or the roof of a car than if it's
>just laying on the ground or even on a roof.

Odd, because that was not my experience with the Antenna-97. I used it
with a Motorola VP Oncore. With the antenna hanging in a rose bush within
three feet of my metal roofed house, a very poor site for sky coverage, the
Oncore picked up solid lock with 4 satellites. None of my hand held units
could do as well in that location. And last time I checked, the branches
of a Siberian Rose bush were non metallic.

--Ira

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: Motorola or Garmin Antenna

From: TomR736570@aol.com
Date: Sun, 11 Apr 1999 19:44:50 EDT
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15378-1999.04.11-18.48.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kirk
And others. More people should be made aware of the benifit of a small
reflective surface under GPS antennas. While hiking with a Garmin 45XL I
could not get adaquete signal. I smothed out a foil wraper from a Hersey's
candy bar, placed it under the antenna and promptly got sufficient signal for
a fix. Reason 99 to always carry a Hersey bar.
Tom Richardson
KA1WZU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] RE: Motorola or Garmin Antenna

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Mon, 12 Apr 1999 02:57:00 +0300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-15381-1999.04.11-19.03.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all,
        Thanks to all those who replied to my query. It seems the Garmin and
Motorola Antenna 97 are quite interchangeable disregarding the different
connectors on each.

Best regards,
David Cureton

From: Cureton David (NTC/MPD)
To: TAPR Special Interest Group
Subject: [tacgps] Motorola or Garmin Antenna
Date: Friday, 09 April, 1999 3:22AM

Hi,
        I am in the process of purchasing a Garmin-25 GPS unit from TAPR and
was wondering which antenna I should get. Motorola or Gamin?

I was unable to determine from the Garmin and TAPR web sites if the Garmin
antenna has an in-built LNA similar t the Motorola unit. As the Garmin is
more expensive than the Motorola product I would assume so.

Is there any significant differences in performance of the two units?

Regards,
David

You are currently subscribed to tacgps as: CURETON@TRSMPD01ME.NTC.NOKIA.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] TAC2

From: "Michael P. Murphy" <mpmurph@cooper-energy-services.com>
Date: Thu, 15 Apr 1999 09:22:07 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16141-1999.04.15-08.27.39--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All...

 Just finished building a TAC2 and fired it up last night. Used
Showtime as interface software and got the beep check followed by the
INIT @4800 @9600. The next line had just a period "." and then the
software locked up. I left the TAC2 running overnight to let the Oncore
try and acquire satellites but got the same behavior in the morning. I
had communication with the Oncore via Motorola software, but could not
change the initial lat. and lon.

 Running an active antenna in a skylight window of an apartment, with
blockage below 40 deg. elevation to the east. An old GPS-30 does fairly
well in the same position as the active antenna feeding the TAC2. The
Oncore has been dormant for over a year.

 Does anyone have any ideas??? Thanks in advance!

Mike Murphy
KA8ABR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] TAC2 and PC Re-boot

From: "Michael P. Murphy" <mpmurph@cooper-energy-services.com>
Date: Thu, 15 Apr 1999 10:05:07 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16151-1999.04.15-09.10.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John

 I did re-boot the PC several times throughout the evening, even after
running Showtime without starting the Motorola software beforehand.

Thanks

Mike Murphy
KA8ABR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Re: TAC2

From: "Henk Uijterwaal (RIPE-NCC)" <henk@ripe.net>
Date: Thu, 15 Apr 1999 16:18:29 +0200 (CEST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16155-1999.04.15-09.22.17--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 15 Apr 1999, Michael P. Murphy wrote:

> Hi All...
>
> Just finished building a TAC2 and fired it up last night. Used
> Showtime as interface software and got the beep check followed by the
> INIT @4800 @9600. The next line had just a period "." and then the
> software locked up.

I've seen this too. IIRC, the problem is related to jumper JP3. The
manual says (used to say): to cut the connection between the middle and
the N pin of JP3, then put a jumper between the middle and N pins.
However, the jumper should be on the middle and I pins.

Henk

```
--------------------------------------------------------------------------------
Henk Uijterwaal                    Email: henk.uijterwaal@ripe.net
RIPE Network Coordination Centre     WWW: http://www.ripe.net/home/henk
Singel 258                          Phone: +31.20.535-4414,  Fax -4445
1016 AB Amsterdam                    Home: +31.20.4195305
The Netherlands                   Mobile: +31.6.55861746
--------------------------------------------------------------------------------

The Committee (...) was unable to reach a consensus that substantial merit was
lacking. Thus, the appeal was deemed meritorious.          (Orlando NABC #19).


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

24. [tacgps] Re: TAC2

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 15 Apr 1999 10:23:29 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16157-1999.04.15-09.29.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
Mike, give TAC32 a try.

   http://www.tapr.org/tapr/html/Ftac32.html

It appears that the Oncore needs to be intialized.  Double check the
communications between the computer and the Oncore (with a logic probe or
O'scope).

Double check that the appropriate jumpers for the Oncore are configured right.

- Steve



At 09:22 AM 4/15/99 -0400, you wrote:
>Hi All...
>
> Just finished building a TAC2 and fired it up last night.  Used
>Showtime as interface software and got the beep check followed by the
>INIT @4800 @9600.  The next line had just a period "." and then the
>software locked up.  I left the TAC2 running overnight to let the Oncore
>try and acquire satellites but got the same behavior in the morning.  I
>had communication with the Oncore via Motorola software, but could not
>change the initial lat. and lon.
>
> Running an active antenna in a skylight window of an apartment, with
>blockage below 40 deg. elevation to the east.  An old GPS-30 does fairly
>well in the same position as the active antenna feeding the TAC2.  The
>Oncore has been dormant for over a year.
>
> Does anyone have any ideas???  Thanks in advance!
>
>Mike Murphy
>KA8ABR

- Steve
 (n7hpr@tapr.org)
 (n7hpr@amsat.org)


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

25. [tacgps] TAC2 Trouble

From: "Michael P. Murphy" <mpmurph@cooper-energy-services.com>
Date: Thu, 15 Apr 1999 11:57:55 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16169-1999.04.15-11.04.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
Henk...

 Thanks for the advise on JP3, I will check for proper configuration.
```

Mike Murphy
KA8ABR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] TAC 2

From: "Michael P. Murphy" <mpmurph@cooper-energy-services.com>
Date: Thu, 15 Apr 1999 15:05:05 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16204-1999.04.15-14.12.26--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Henk and Steve...

Henk: I moved the jumper on JP3 and the Showtime software "initialized"
the Oncore and then moved on to the screen showing the large digits, but
the time stayed at zero and no satellite data was displayed. I then
shut down Showtime and started the Motorola software and the Oncore was
running properly, showing the correct lattitude, longitude and time.
Thanks for the help!

Steve: As you can read above, the JP3 jumper was the initial problem and
now the Oncore is running properly. Since the Motorola software is in
communication with the Oncore, I assume that everything is OK on the
serial link between the PC and the TAC. I will certainly be purchasing
TAC32 soon, but I am using a 486 machine running DOS 6.22. Soon I will
be building up a Pentium machine in which I will install WIN95 or NT,
but I do not intend to put WIN95 on the old 486. I have a portable
machine at work that runs '95, and I may bring that home some time and
try TAC32. Thanks for your suggestions.

Thanks again, gentlemen!

Mike Murphy
KA8ABR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] PPS on GPS receivers

From: Ian Roberts <itr@nanoteq.co.za>
Date: Mon, 19 Apr 1999 14:16:10 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16741-1999.04.19-07.20.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brooks Shera published a systen in QST last year, for locking a voltage
tuned oscillator to the GPS clocks, using the PPS (1 Hz) output from a
GPS receiver.
But I understand that not all PPS outputs are of suitable timing
quality. A microsecond of jitter, for example, is not good enough for
the purpose. Depends on the type of receiver.

I want to obtain a used GPS receiver here in South Africa for the
purpose. Freely available are Garmin and Magellan. Are these suitable?
I understand that the Garmin 25 is "acceptable", so presumably anything
upstream is also OK...

Ian Roberts.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] TAC 2

From: "Michael P. Murphy" <mpmurph@cooper-energy-services.com>
Date: Mon, 19 Apr 1999 10:20:33 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16776-1999.04.19-09.41.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Everyone...

I tried to respod to the list Friday but ended up getting bounced
because my message began with "Henk and Steve", which had been used
previously. Here is what I tried to send...

Henk: I moved the jumper on JP3 and the Showtime software "initialized"
the Oncore and then moved on to the screen showing the large digits, but
the time stayed at zero and no satellite data was displayed. I then
shut down Showtime and started the Motorola software and the Oncore was
running properly, showing the correct lattitude, longitude and time.
Thanks for the help!

Steve: As you can read above, the JP3 jumper was the initial problem and
now the Oncore is running properly. Since the Motorola software is in
communication with the Oncore, I assume that everything is OK on the
serial link between the PC and the TAC. I will certainly be purchasing
TAC32 soon, but I am using a 486 machine running DOS 6.20. Soon I will
be building up a Pentium machine in which I will install WIN95 or NT,
but I do not intend to put WIN95 on the old 486. I have a portable
machine at work that runs '95, and I may bring that home some time and
try TAC32. Thanks for your suggestions.

The above paragraphs were to go out on Friday. I was out of town over
the weekend, and when I returned last night I tried the Showtime
software again. I had been running windows and shut it down to get back
to DOS 6.2. I started Showtime, and it came up running! I have not
done anything different, in fact I had tried several iterations in
booting the computer last week trying to get the Showtime software to
start. This morning it was still running, averaging position data.
Interesting!

Thanks again, gentlemen!

Mike Murphy
KA8ABR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] Re: PPS on GPS receivers

From: Mark Allwright <mallwri@orion.didata.co.za>
Date: Mon, 19 Apr 1999 18:27:15 +0200 (SAST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16792-1999.04.19-11.31.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Ian.

I have used both the Motorola UT+ and Rockwell Jupiter boards here in RSA
with very good results; mail me or phone me for sources etc.

Regards.
Mark (ZR1FZ).

--
Mark Allwright phone +27 (0)21 659 2098 fax +27 (0)21 659 2101
                cell +27 (0)82 557 3359
mailto:mallwri@orion.didata.co.za   http://www.didata.co.za

Reboot Universe? [yes/no]   CCIE #1088

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] TAPR activities at Dayton HamVention

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 19 Apr 1999 12:58:12 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16812-1999.04.19-13.03.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR Dayton Activities 1999
for details visit: http://www.tapr.org/tapr/html/Fdayton.html

```
------------------------------

TAPR Digital Forum on Friday

The schedule for the TAPR digital forum is:
        10:00 - 10:05am (5 min)
              Introduction to Forum, John Ackermann, N8UR

        10:05 - 10:30am (25min)
              TAPR Update, Greg Jones, WD5IVD

        10:30 - 11:00am (30 min)
              Linux AX.25 Update, John Ackermann, N8UR

        11:00 - 11:30am (30 min)
              PIC Development Update, Steve Bible, N7HPR and John Hansen, W2FS

        11:30 - 12:00noon (30 min)
              GPS Projects, Steve Bible, N7HPR

        12:00noon - 12:30pm (30 min)
              Compact Flash Card Project, John Koster, W9DDD

        12:30 - 1:00pm (30 min)
              TAPR APRS News, Steve Dimse, K4HG and Stan Horzepa, WA1LOU

        1:00pm - 1:45pm (45 min)
             FHSS Radio Project Update, Tom McDermott, N5EG

------------------------------

Attending the 1999 Dayton Hamvention?  Then don't miss out on PACK*BASH!

What?
       An event for the digitally-inclined ham, featuring:
        *  Buffet dinner
        *  "A Little Technology Goes a Long Way" -- Keynote address
                by Dave Pederson, N7BHC
        *  TAPR special interest group meetings
        *  "Birds of a Feather" gatherings

When?
        Friday evening, May 14, 1999
        Doors open at 7:00 pm; dinner served at 7:30 pm
        Speaker and meetings after dinner


Where?
        NCR "Sugarcamp" Conference Center, 101 W. Schantz Ave. --
        South of downtown Dayton, just west of Main St. (Rt 48).
        Maps available on the TAPR web site (www.tapr.org) or at the
        TAPR booth.


How?
        Dinner requires advance registration and payment through TAPR.
        Tickets will be available at the TAPR booth on Friday, though
        we strongly encourage registration <before> Hamvention.  The cost
        is $20.00 per person, tax and tip included.

        All amateurs are welcome to attend, enjoy the speaker, and
        particpate in the meetings, although only those purchasing a
        dinner can eat.

        To register, contact:
        PACK*BASH
        c/o TAPR
        8987-309 E. Tanque Verde Road #337
        Tucson, AZ   85749-9399

        Phone: (940) 383-0000
        Fax: (940) 566-2544
        Internet: tapr@tapr.org

        Visa/Mastercard Accepted

Who?
        PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet
```

Radio, the national leader in digital communication -- and the
Miami Valley FM Association, Dayton's packet radio club.

For more information (including maps), go to
http://www.tapr.org/tapr/html/dayton.html,
or send email to tapr@tapr.org.

You can request information via packet radio at
BASH@W8APR.#DAY.OH.USA.NOAM.

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: PPS on GPS receivers

From: Ian Roberts <itr@nanoteq.co.za>
Date: Tue, 20 Apr 1999 10:04:38 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-16940-1999.04.20-03.08.48--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mark, thanks for taking time out to reply to my query.
I understand from the reference to boards that you have a
component-level system in mind, speaking to a PC. To which must be added
the antenna, power supply, etc.

What I have in mind is a complete (second hand) GPS receiver, usable as
a stand-alone item, or as a source of PPS for the phase-locking role.

By the way, certain of the SABC transmitters are precision offset to
reduce interference to viewers in remote locations, and locked to Rhode
and Schwarz rubidium standards. In Joburg the ch 13 transmitter is on
247.456.025 MHz, for example. This will give around 1 in 10E-10, or 1 in
10E-11 on a good day. I could phase-lock the oscillator to this in real
time, using the error voltage to pull the 10 MHz oscillator, without
worrying about long time constants, super-stable crystal ovens, or GPS!
But it still requires another receiver, interface board, 10 MHz
oscillator, antenna, etc., so maybe the GPS route is going to be cheaper
(and more convenient) after all.

Do do know of a local source of 10 MHz voltage controlled crystal ovens?

What would you do?
Cheers,
Ian ZS6BTE

Mark Allwright wrote:
>
> Hi Ian.
>
> I have used both the Motorola UT+ and Rockwell Jupiter boards here in RSA
> with very good results; mail me or phone me for sources etc.
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] dgps to picopacket wiring?

From: "brad hampton" <bhampton@whidbey.net>
Date: Tue, 20 Apr 1999 23:25:50
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-17079-1999.04.20-23.29.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have completed the assembly of my dgps ref. station and it looks like it
is working properly.
I got the picopacket as outlined in the instructions and initalised it as
per page 11 of the instructions and it triggers the 2m HT when I enter text
and hit enter. the problem is when I connect the tnc to the dgps.
the dgps is connected with ground(output return) to pin 5 and the
differental output+ to pin 3 as per page 5.

```
my picopacket has                           DGPS
pin 1 (CTS) clear to send
pin 2 (RXD) receive data
pin 3 (TXD) transmit data -------------------pin 3 +
pin 4 (RTS)request to send
pin 5 (ground)-------------------------------pin 5 -
pin 6 (DCD)

I hope some one can help me I can't wait to get this on the air.
I am in the NAVY and will be transfering to guam soon and they don't have a
USCG DGPS ref. station.

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

33. [tacgps] Re: dgps to picopacket wiring?

From: Sam Smith <sam.smith@mindspring.com>
Date: Wed, 21 Apr 1999 07:29:21 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-17121-1999.04.21-06.33.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
Don't know if this helps, but the manual for my picopacket listed the
colors for the cable wires exactly backwards from reality. Check it
carefully.

am


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

34. [tacgps] Re: picopacket init. for DGPS

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Wed, 21 Apr 1999 18:14:05 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-17222-1999.04.21-17.17.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
Hello Brad,

Just like the fellow said on the list, make absolutly certain you have the
right wires coming from the PicoPacket.  Use an ohm meter to ring them out.
 Cause I have a PicoPacket and the colors verse signals were wrong.


You can see the DGPS corrections coming out of the DGPSIB buy connecting it
to a computer running a terminal program.  This would be a simple and good
thing to do to verify that the DGPSIB is working and operating at the baud
rate you selected.

On the PicoPacket connecting to the DGPSIB, make sure it is operating at
the same speed as the DGPSIB.  The wiring connections are as follows:

  Pico      DGPSIB
 ------    --------
    3          3     Diff corrections out of the DGPSIB and into the Pico
    5          5     Ground


For a remote GPS receiving the corrections the wiring would look like:

  Pico      GPS Receiver
 ------    --------
    2          ?     Diff corrections out of the Pico and into the GPS
    5          5     Ground

I put a "?" because you need to find the pin that is the INPUT to the GPS
receiver.

Does this help?


- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org
```

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] kpc3+ to garmin 12xl gps? wiring

From: "brad hampton" <bhampton@whidbey.net>
Date: Thu, 22 Apr 1999 1:38:17
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-17277-1999.04.22-01.42.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

good day I am very close to getting my dgps up can any one tell me how to
setup and wire a kpc3+ to a garmin 12xl?

my dgps is outputing at 2400 and I finaly have data flowing to my
picopacket the wiring diagram is off.

the pico packet is talking to my ht at 1200

then on the other end I have another ht wired to the 9pin port on the
kpc3.

I have the kpc3 set up for 4800 which is what the garmin is looking for in
RTCM I pluged the gps's ground into pin 7 on the 25 pin plug which is frame
ground so all I need to do is figure out where to put the other pin, my
first thought is to use pin 2 or 3 but that does not seem to give me
results. help! I am so close.
brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

36. [tacgps] Re: kpc3+ to garmin 12xl gps? wiring

From: "Pete Prossen" <prossen@znet.com>
Date: Thu, 22 Apr 1999 21:03:43 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-17401-1999.04.22-23.09.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Brad

Keeping in mind that the 25-pin connector on the KPC3+ is mapped as DCE, as
opposed to a COM port on a PC which is mapped as DTE, connect as follows:

Black Garmin wire to pin 7 (signal ground)
Brown Garmin wire to pin 2 (Garmin output, TNC's TXD input)
White Garmin wire to pin 3 (Garmin input, TNC's RXD output)

I also connect the red Garmin wire to pin 13, having optioned the KPC3+ to
pass its V+ out that pin to power the Garmin.

The following apply to the above:

1. You are using Garmin's standard cable with the 4-way circular connector
whose color codes are as above. I have not verified that the 12XL accepts
this connector/cable, but every other Garmin I've seen does so.

2. You wish to provide for the Garmin to output NMEA to the TNC as well as
accept RTCM from the TNC. Otherwise you can omit the brown wire
connection.

Hope this works for you.

Pete Prossen
WA6ZUH
prossen@znet.com

> From: brad hampton <bhampton@whidbey.net>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Subject: [tacgps] kpc3+ to garmin 12xl gps? wiring
> Date: Wednesday, April 21, 1999 6:38 PM
>
> good day I am very close to getting my dgps up can any one tell me how to

> setup and wire a kpc3+ to a garmin 12xl?
>
> my dgps is outputing at 2400 and I finaly have data flowing to my
> picopacket the wiring diagram is off.
>
> the pico packet is talking to my ht at 1200
>
> then on the other end I have another ht wired to the 9pin port on the
> kpc3.
>
> I have the kpc3 set up for 4800 which is what the garmin is looking for
in
> RTCM I pluged the gps's ground into pin 7 on the 25 pin plug which is
frame
> ground so all I need to do is figure out where to put the other pin, my
> first thought is to use pin 2 or 3 but that does not seem to give me
> results.   help! I am so close.
> brad
>
> ---
> You are currently subscribed to tacgps as: PROSSEN@ZNET.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] Re: kpc3+ to garmin 12xl gps? wiring

From: "Pete Prossen" <prossen@znet.com>
Date: Thu, 22 Apr 1999 21:08:23 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-17402-1999.04.22-23.13.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brad

One more thing: The Garmin cable doesn't support RTS and CTS, so it would
be advisable to connect pins 4 and 5 together on the connector that mates
to the TNC's async port. I'm not sure it is necessary but it is more
sanitary to do so.

Regards

Pete Prossen
WA6ZUH
prossen@znet.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] garmin 12xl trouble

From: "bradley hampton" <bhampton@whidbey.net>
Date: Tue, 27 Apr 1999 19:30:53 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18051-1999.04.27-21.35.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I put together my DGPS station with a pico packet on the xmit side and a KPC3+ on the receive side and I
 failed to get corrections into my gps even thow I could connect my laptop and see the data clearly they
 looked right with out calls or other header stuff.

I connected the garmin cable with black ground to pin 7 on the 25 pin connector and brown garmin output
to pin 2 and white garmin input to pit 3 and shorted pins 4 and 5 together RTS CTS I had the KPC set
at 4800 and the garmin to RTCM/NONE at 4800baud
no corrections.

so I reversed my setup I placed the KPC3 on the xmit end and put the pico packet on the receive end
again I can see the packets on my laptop on the output of the picopacket but when I plug in the garmin
12xl I get no corrections.
on the pico I am connecting pin 5ground to the garmin black ground and the black TXD data out to the
garmin white data in.
I also shorted the cts and rts in an effort to make something happen.

has any one else had this problem are there any tests or checks or settings I am over looking?
thanks brad KC7MRP oak harbor WA

39. [tacgps] Re: garmin 12xl trouble

From: "Doug McKinney" <buoy@redshift.com>
Date: Tue, 27 Apr 1999 22:21:30 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18074-1999.04.28-00.29.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: bradley hampton <bhampton@whidbey.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Tuesday, April 27, 1999 7:31 PM
Subject: [tacgps] garmin 12xl trouble

I put together my DGPS station with a pico packet on the xmit side and a KPC3+ on the receive side and I failed to get corrections into my gps even thow I could connect my laptop and see the data clearly they looked right with out calls or other header stuff.

Oh boy, here is a helpful solution to checkout!
With DB9 DB9-2 TX and DB9-3 RX; DB25 DB25-2 RX and DB25-3 TX (TNC side) DB9-5 GND
PC side DB9-3 TX and DB9-2 RX: DB25-3 RX and DB25-2 TX; DB25-7 GND (I always remember "PC is 2 receive [DB9 of course]")
When going from TNC to TNC using hard wire then the TX (RX) of one goes to the RX (TX) of the other (this is the null modem connection.
GPS is DB9-2 TX and DB9-3 RX
So, now you can solve the RS232 connections, which is usually the first wiring to require critical checking!!!
73's
Doug

I connected the garmin cable with black ground to pin 7 on the 25 pin connector and brown garmin output to pin 2 and white garmin input to pit 3 and shorted pins 4 and 5 together RTS CTS I had the KPC set at 4800 and the garmin to RTCM/NONE at 4800baud
no corrections.

so I reversed my setup I placed the KPC3 on the xmit end and put the pico packet on the receive end again I can see the packets on my laptop on the output of the picopacket but when I plug in the garmin 12xl I get no corrections.
on the pico I am connecting pin 5ground to the garmin black ground and the black TXD data out to the garmin white data in.
I also shorted the cts and rts in an effort to make something happen.

has any one else had this problem are there any tests or checks or settings I am over looking?
thanks brad KC7MRP oak harbor WA

40. [tacgps] Re: garmin 12xl trouble

From: Robert Winingham <kc5ejk@onramp.net>
Date: Wed, 28 Apr 1999 01:31:36 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18079-1999.04.28-01.35.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I put together my DGPS station with a pico packet on the xmit side and a KPC3+ on the receive side a

The 8.3 firmware version of the KPC-3 Plus has a new parameter called:
MYDGPS call

see end of page 7 of the 10 page user guide.

I have not tried it but this might help strip the path information
from the RTCM data. Some GPS units (Garmin) have a problem with
the call sign and path information that comes before the RTCM
part of the packet.

You can check the archives for the TNC setting that are needed
to make the Garmin function.

73

----- kc5ejk@onramp.net or kc5ejk@amsat.org -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] tac32 moderated message

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 29 Apr 1999 16:43:16 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18323-1999.04.29-15.48.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
>Date: Thu, 29 Apr 1999 10:34:49 -0400
>From: Sam Smith <sam.smith@ee.gatech.edu>
>Organization: Georgia Tech
>X-Mailer: Mozilla 4.51 [en] (WinNT; U)
>X-Accept-Language: en
>MIME-Version: 1.0
>To: tac32@lists.tapr.org
>Subject: DGPSIB problem and questions
>Content-Type: text/plain; charset=us-ascii
>Content-Transfer-Encoding: 7bit
>
>Actually it's probably a tnc problem. I had everything working a couple
>of weeks ago, but then removed the tnc and used it for something else.
>When I put everything back together, now it just sends occasional
>packets, although I see the data coming from the DGPS OK. I reset the
>tnc to it's default and started from scratch.
>
>Anyway, if I understood how it worked I might be able to troubleshoot
>and fix it.
>
>I'm using a kpc3+.
>
>What is the purpose of the pactime command?
>Does the board send the data with a <cr> at the end?
>If it does, then why do I need a pactime command?
>
>--
>Sam Smith
>Georgia Tech, ECE 0250, Atlanta, GA USA 30332
>http://www.ee.gatech.edu/users/sam


- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

42. [tacgps] ARRL & TAPR 1999 DCC Announcement

From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 29 Apr 1999 16:00:10 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18337-1999.04.29-15.57.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
1999 ARRL and TAPR Digital Communications Conference
September 24-26, 1999
Phoenix, Arizona

Full announcement and details can be found
at: http://www.tapr.org/dcc

-----

The 1999 ARRL and TAPR Digital Communications Conference will
be held September 24-26, 1999 in Phoenix, Arizona. This year's
conference location is just minutes away from the Phoenix Sky Harbor
International Airport (PHX).

-----

Symposia, Seminars, Banquet

In addition to the presentation of papers on Saturday, three
symposia/seminars will be held.  These sessions are provided to allow
those with additional time and interest to make the most of the Digital
Communications Conference.  For those who may have interest in
just one symposium or seminar, registration for the conference is not
required to attend these activities.  This allows maximum flexibility for
```

those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Third APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father of APRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), Mike Musick, N0QBF (developer of PocketAPRS), and other nationally-known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

Starting late Friday afternoon, a half-day technical seminar will be held. In the past this seminar has covered topics such as RF, DSP, Advanced Networking Topologies and other stimulating topics.

On Saturday night the DCC Banquet will be held. This year the conference is proud to have Geoff Baehr, N6LXA, Sun Microsystems Chief Network Officer at the banquet to speak. Sun Microsystems has been doing some very exciting things in networking over the years and the talk should be an interesting one. After the banquet there will be time for special interest group gatherings.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus on the things you need to know now in order to understand and begin to participate in PIC development. PIC processors are becoming very important in various project designs and implementations. This seminar will by presented by the TAPR PIC Development team.

Fourth Annual ARRL and TAPR DCC Student Papers Award

ARRL and TAPR especially welcome papers from full-time students to compete for the fourth annual student papers award. Two $500 travel awards may be given, one in each of the following categories: a) best technical/theory-oriented paper by a student, and b) best educational or community-oriented application paper by a student. The paper should relate directly to a wireless digital communication topic (see the guidelines for more information). Papers co-authored by educators or telecommunications professionals are also eligible for this award as long as a student is the first author. The deadline for receipt of finished student paper manuscript is July 10, 1999. Please note that this deadline is different from the general conference paper submission date. For full details and paper guidelines contact TAPR or browse to http://www.tapr.org/dcc.

Call for Conference Proceeding Papers

Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the conference is not required for publication. The primary purpose of the conference is to communicate ideas and techniques regarding digital communications. Papers written in an informal style are welcome, as well as those written to academic standards. If you know of someone who is doing great things with digital communications, be sure to tell them about this! Papers are due by August 9, 1999, and should be submitted to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111, or via e-mail to lweinberg@arrl.org. The paper submission guidelines are available on-line (http://www.tapr.org/dcc).

International Co-Host

PRUG (Packet Radio User Group of Japan) will be the International co-host for a second year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit http://www.prug.or.jp for more information about the organization.

Full information on the conference and hotel information can be
obtained by contacting Tucson Amateur Packet Radio, 8987-309 E.
Tanque Verde Road #337, Tucson, AZ 85749-9399, phone 940-383-0000,
fax 940-566-2544, e-mail tapr@tapr.org, browse www.tapr.org/dcc.

Sincerely,
  Greg Jones, WD5IVD, TAPR Conference Chair
  Steve Stroh, N8GNJ, Conference Manager
  Dan Meredith, N7MRP, Local Host Liaison
  Keith Justice, KF7TP, Local Host Liaison

Note: If you need conference handouts or flyers for ham club meetings,
contact TAPR to get what you need!

Hotel Information

Conference presentations, meetings, and seminars will be held at the
Holiday Inn Select Airport. Special DCC rooms rates are $69/single
and $79/double per night. When making reservations with the hotel,
be sure to indicate you are attending the ARRL and TAPR DCC in
order to get the discount. It is highly recommended that you book
your room prior to arriving. A block of 75 rooms is reserved until
August 22, 1999. After the 75 rooms are booked, rooms will only be
available in nearby hotels, so be sure to book your rooms early! The
hotel provides transportation to and from the Phoenix Sky Harbor
International Airport. Please contact the hotel to arrange specific
transportation needs.

   Holiday Inn Select Airport (conference hotel)
   4300 E Washington
   Phoenix, AZ 850234
   Phone 602-273-7778, fax 602-286-1109

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
----
e-mail: tapr@tapr.org   web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000   fax: 940-565-2544

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

43. [tacgps] RE: tac32 moderated message

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 29 Apr 1999 17:02:55 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-18342-1999.04.29-16.08.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 03:47 PM 4/29/99 -0500, you wrote:
>Steve- Are "we" now a moderated email net?
>73's
>Gary N8DMT

No Gary, TACGPS is not moderated. What I forwarded was a message sent to
the TAC32 list (which is moderated) and the content was more TACGPS
oriented. So I forwarded it to TACGPS.

Sorry for the confusion.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

May 1999

Original source file: tacgps.9905
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9905

1. [tacgps] RTCM gamin 12xl

From: "bradley hampton" <bhampton@whidbey.net>
Date: Sun, 2 May 1999 08:19:42 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18739-1999.05.02-10.24.15--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I finished my DGPS ref station and I had allot of problems getting my data from ny kpc3+ to my garmin12xl

I set the DGPS to out put at 4800 baud to my picopacket and the kpc3+ at 4800 connected to the garmin. I am using 5sec updates.

I am using pins 7ground and pin 3 tnc output to my garmin black ground and the serial input.

I also made sure that the picopacket was not set to remove headers and I used the myheader command in the kpc to remove the received headers this allows you to use a (budlist on DGPS) to keep junk out of the garmin, oh the picopacket is set to (unproto DGPS)

I am thinking of playing with the pactime command it is set for (after 2)   100ms I also need to make sure that my streamsw is set to $00 in my kpc3.

* I am getting DGPS corrections about 25% of the time and some times the garmin says UNUSABLE EPE- re-init

I can plug my garmin into a true blue DGPS receiver in DGPS mode and it picks up the corrections in about 10 sec and holds lock then I unplug the true blue and plug in the tac2gps and it gets lock for about 21 sec and loses it then gets it back.

any ideas?

---

2. [tacgps] Re: RTCM gamin 12xl

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 02 May 1999 12:04:23 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18747-1999.05.02-11.09.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:19 AM 5/2/99 -0700, you wrote:

>* I am getting DGPS corrections about 25% of the time and some times the
garmin says UNUSABLE EPE- re-init

Bradley, sounds like you need to check your data link. Make certain that
the TNC's and radios are correctly tuned. Make certain the deviation on
both units is set correctly.

>I can plug my garmin into a true blue DGPS receiver in DGPS mode and it
picks up the corrections in about 10 sec and holds lock then I unplug the
true blue and plug in the tac2gps and it gets lock for about 21 sec and
loses it then gets it back.

True blue DGPS receiver? You mean a commercial unit?

How does your 12XL behave when connected directly to the TAPR DGPSIB? If
it works fine, then as I mentioned above, check your data link.

Keep charging.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---

3. [tacgps] Re: DGPSIB problem and questions

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 02 May 1999 12:08:20 -0400

To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: sam.smith@ee.gatech.edu
Message-ID: <LYR6754-18748-1999.05.02-11.13.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 04:43 PM 4/29/99 -0400, you wrote:
>>Actually it's probably a tnc problem. I had everything working a couple
>>of weeks ago, but then removed the tnc and used it for something else.
>>When I put everything back together, now it just sends occasional
>>packets, although I see the data coming from the DGPS OK. I reset the
>>tnc to it's default and started from scratch.
>>
>>Anyway, if I understood how it worked I might be able to troubleshoot
>>and fix it.
>>
>>I'm using a kpc3+.
>>
>>What is the purpose of the pactime command?
>>Does the board send the data with a <cr> at the end?
>>If it does, then why do I need a pactime command?

Sam, the PACTIME command is how long the TNC waits before it transmits.
This is before it receives a force packet character such as the <CR>. In
transparent mode, there is no force packet charater. Naturally, because
it's transparent mode! So the PACTIME tells the TNC when the buffer fills
when to transmit it.

So the bottom line is, if your TNC is in CONV mode, the DGPSIB does
terminate the RTCM corrections with a <CR><LF> and will force the transmit
of the packet. In TRANS mode you need to adjust PACTIME in order for the
TNC to transmit the packet.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Re: RTCM gamin 12xl

From: Robert Winingham <kc5ejk@onramp.net>
Date: Sun, 2 May 1999 11:34:30 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: bhampton@whidbey.ne
Message-ID: <LYR6754-18749-1999.05.02-11.39.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I finished my DGPS ref station and I had allot of problems getting my data from ny kpc3+ to my
garmin12xl

Are you using KPC-3 PLUS firmware version 8.3 ?

PS   I like that your mailer doesn't truncate lines at some fixed length, that
       makes it very easy to adjust to any screen width.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: RTCM gamin 12xl

From: "bradley hampton" <bhampton@whidbey.net>
Date: Sun, 2 May 1999 22:02:24 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18851-1999.05.03-00.06.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

yes 8.3 I am getting corrections for about 7sec and then it loses it for
about 21 sec and gust as the garmin is about to protest it get another blast
of corrections.
I have the dgps set to 2 sec update same thing.

I changed the pactime from 2 to 10   as per tapr no luck in converse mode
mabe I should look at transparent modes?

I hope I can get this up and running before I go to guam for the next 3-5
years(NAVY) they don't have coast guard differental reference stations there
and I like to have accuracy on my dive boat!
later brad KC7MRP

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: RTCM gamin 12xl

From: Sam Smith <sam.smith@ee.gatech.edu>
Date: Mon, 03 May 1999 09:39:31 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18887-1999.05.03-08.43.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I tracked down the problems I was having to a case of operator error. I
had power save mode on my HT turned on. After 5 seconds of inactivity
the receiver would start sleeping/waking/sleeping/waking. I missed the
start of about 2/3rds of the packets.

Once again the radio is smarter than the operator.
--
Sam Smith
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] TAC-2 for a stratum 1 time server?

From: Bill Broadley <bill@math.ucdavis.edu>
Date: Mon, 3 May 1999 06:53:12 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18890-1999.05.03-08.57.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello all,
        I have an oncore VP (from tapr) and am using it as a stratum-1
time server. Despite the 50 ns resolution signal I'm only getting
about 1 ms of accuracy. After some research it seems that it's
mostly the fault of the lousy clock on the motherboard of the
computer (linux/intel) I have the gps connected to.

On the tac-2 www page:
>One of the major interests that TAPR has in GPS timing is in the use of
>GPS as a way to steer ("discipline") an oscillator. By tying together a
>low-cost crystal oscillator and a GPS receiver, it is possible to have
>a Rubidium-class (better than one part per billion) frequency standard.

Is anyone looking into using the TAC-2 to generate the 14.X Mhz signal
needed by todays motherboards? Seems like doing so would have
lots of applications. I believe the standard motherboards are are
only accurate to 100 parts per million or so.

I'm also curious are there many non-windows tac-2 users out there?
I'm hoping tac-2 isn't to tightly tied to the windows software. Are
the specs, interface, protocol to talk to the tac-2 fully documented?

In any case I'm very happy with the oncore VP, and the Synergy
daughter card/case. Kudos to all involved.

--
Bill

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: RTCM gamin 12xl

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 3 May 1999 10:34:14 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18900-1999.05.03-09.39.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I tracked down the problems I was having to a case of operator error. I
> had power save mode on my HT turned on. After 5 seconds of inactivity
> the receiver would start sleeping/waking/sleeping/waking. I missed the
> start of about 2/3rds of the packets.

This has gotten all of us. We need to make sure it is #1 in the
troubleshooting list. I will add it to my TROUBLE.TXT docs.

Thanks, de WB4APR, Bob

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] [SoFlaHams] GPS Service Interruption

From: Kevin <kjs@netrus.net> (by way of Ray Vaughan <ray@rayvaughan.com>)
Date: Mon, 03 May 1999 12:50:59 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18925-1999.05.03-11.55.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I thought some people in this list might be interested in this information.
 Forgive me if it's old news.

From: Kevin <kjs@netrus.net>

GPS Service Interruption

DESCRIPTION
On Friday 4/23/99, at about 11 AM EST, some GPS sites began reporting
timing problems. At approximately 3 PM EST, the problems seem to have
been resolved, and normal GPS signals restored. Similar, but less
widespread incidents, were also reported on Sunday 4/25/99 and Tuesday
4/27/99.

KNOWN FACTS ABOUT THE EVENT
A USAF Space Command GPS system test for Y2K and EOW rollover was in
effect at the time of the incidents using satellite SVN 27. This
satellite was marked "unhealthy" to prevent GPS receivers (such as the
RFTG) from being affected by the testing. SVN 27 was visible across
North America during the time of the incidents. The final part of this
phase of testing occurred on 5/1/99.

FUTURE EVENTS
The USAF is planning to launch a new satellite - PRN 20 - during early
May '99. If deployed successfully, it will be used for the next phase of
testing (June 1999) before it is added to the GPS almanac - thus denying
it's access by commercial receivers, such as ours.

Lucent continues to investigate and will continue to provide further
updates on this issue as more information becomes available.

--
Kevin
kjs@netrus.net.......http://www.netrus.net/users/kjs/

Is there anybody listening?
Is there anyone who smiles without a mask?
What's behind the words--images they know will please us?
I'll take what's real. Bring up the lights.
Is there anybody listening? Is there anyone that sees what's going on?
Read between the lines, criticize the words they're selling.
Think for yourself and feel the walls...become sand beneath your feet.
Queensryche.................http://www.queensryche.com/

Start a new hobby. Meet a new friend.
http://www.onelist.com
ONElist: The leading provider of free e-mail list services!

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Re: TAC-2 for a stratum 1 time server?

From: Reg Clemens <reg@dwf.com>
Date: Mon, 3 May 1999 16:15:57 -0600 (MDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18987-1999.05.03-17.26.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I have an oncore VP (from tapr) and am using it as a stratum-1
> time server. Despite the 50 ns resolution signal I'm only getting
> about 1 ms of accuracy. After some research it seems that it's
> mostly the fault of the lousy clock on the motherboard of the
> computer (linux/intel) I have the gps connected to.

Well, I would need more details to be of much help, but Ill tell you what
I see here with a VP/TAC2. I have a 350MHz Pentium II, Im running
Linux 2.2.7 and/or FreeBSD-4.0, and Im running NTP-4.0.92h.
These are all the most recent versions, tho the results havent changed
over the last several months, and various revisions of Linux/FreeBSD-4.0/NTP.

I use the ONCORE driver in ntp, and use the KERNEL PLL option.
Depending on how you measure it, I see (at worst) +-500ns of noise and
jitter around some mean. Actually, this noise is mostly one sided, so
-0+1us might be a better characterization. This result is from a plot
of the data in the clockstats file, which shows the error on a second-by-
second basis, of the timestamp of the PPS signal, and is the INPUT to the
PLL controling the frequency of the CPU. If you look at the loopstats file
you see a number that is usually less than 50ns, but does pop up to several
hundred every now and then.

I also have an old Sun SparcStation2 connected to the same TAC2, and the
numbers there are an order of magnitude worse, but it doesnt have a
KERNEL PLL, and the machine itself is an order of magnitude slower.

> Is anyone looking into using the TAC-2 to generate the 14.X Mhz signal
> needed by todays motherboards? Seems like doing so would have
> lots of applications. I believe the standard motherboards are are
> only accurate to 100 parts per million or so.

There was a discussion of your options here on comp.protocols.time.ntp
within the last few days,- it should still be available,- there were 15-20
articles in the thread.

Reg.Clemens
reg@dwf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Re: TAC-2 for a stratum 1 time server?

From: Bill Broadley <bill@math.ucdavis.edu>
Date: Mon, 3 May 1999 15:36:32 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-18991-1999.05.03-17.41.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Well, I would need more details to be of much help, but Ill tell you what
> I see here with a VP/TAC2. I have a 350MHz Pentium II, Im running
> Linux 2.2.7 and/or FreeBSD-4.0, and Im running NTP-4.0.92h.
> These are all the most recent versions, tho the results havent changed
> over the last several months, and various revisions of Linux/FreeBSD-4.0/NTP.
>
> I use the ONCORE driver in ntp, and use the KERNEL PLL option.
> Depending on how you measure it, I see (at worst) +-500ns of noise and
> jitter around some mean. Actually, this noise is mostly one sided, so
> -0+1us might be a better characterization. This result is from a plot

Interesting, a far cry from < 50 ns. Not all that bad though. Do you
run in zero d mode?

> of the data in the clockstats file, which shows the error on a second-by-
> second basis, of the timestamp of the PPS signal, and is the INPUT to the
> PLL controling the frequency of the CPU. If you look at the loopstats file
> you see a number that is usually less than 50ns, but does pop up to several
> hundred every now and then.

I'll have to graph loopstats.

> I also have an old Sun SparcStation2 connected to the same TAC2, and the
> numbers there are an order of magnitude worse, but it doesnt have a
> KERNEL PLL, and the machine itself is an order of magnitude slower.

SOunds reasonable.

> There was a discussion of your options here on comp.protocols.time.ntp
> within the last few days,- it should still be available,- there were 15-20
> articles in the thread.

Yeah, I was part of that thread, was hoping for tac-2 specific info,
thanks for the pointer/info I'll keep digging. The current best
option loops to be replacing the motherboard crystal with a $20-$50
part from rakon or similiar that gives 0.5-1 ppm accuracy.

--
Bill

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] What is station ID?

From: Charles Dapples <ccdapple@wtp.net>
Date: Tue, 04 May 1999 15:46:34 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19133-1999.05.04-16.50.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
    My DGPS/OncoreVP is assembled and ready for testing, but
I don't understand what I should use for the station ID. I see how
to set it, the description is quite clear. But the instructions fail to

describe WHAT the station ID is and what it is used for.

--

Chris / KF7KN

--
+-------------------------------+-------------------------------+
| e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507 |
+-------------------------------+-------------------------------+
| kf7kn@amsat.org | Fax: (406) 446-1607 |
+-------------------------------+-------------------------------+

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] Re: What is station ID?

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Tue, 04 May 1999 19:06:07 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19140-1999.05.04-18.11.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 03:46 PM 5/4/99 -0600, you wrote:
>Hi All,
>   My DGPS/OncoreVP is assembled and ready for testing, but
>I don't understand what I should use for the station ID. I see how
>to set it, the description is quite clear. But the instructions fail to
>

>describe WHAT the station ID is and what it is used for.

Chris, the RTCM specification states:

   "...the Station ID refers to the identification of the differential
reference station. It does not, in general, identify the data link station."

You will see the Station ID in the NMEA sentence $GPGGA (field 12) so you
can see which station the GPS receiver is using for DGPS corrections. For
example, the USCG DGPS system, each of the reference stations each have a
different Station ID. You can see which station you are receiving in the
NMEA stream.

The data link identifcation if you are using plan ol' AX.25 packet is the
packet TO/FROM line.

You can set Station ID to anything you want. Since we are hams and
following the lead of W3IWI many set their Station ID to "73". If you have
more than one reference station then it would be good to set differing
station id values.

Hope this helps.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Re: What is station ID?

From: Dave Martindale <davem@cs.ubc.ca>
Date: Tue, 4 May 1999 16:24:20 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19141-1999.05.04-18.28.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>You can set Station ID to anything you want. Since we are hams and
>following the lead of W3IWI many set their Station ID to "73". If you have
>more than one reference station then it would be good to set differing
>station id values.

Another possible consideration:

Garmin GPS receivers remember where particular DGPS stations are located.
When you first tune a Garmin receiver to a DGPS station it hasn't used
before, the "distance to station" field will be blank on the tuning display.
Later, you'll find it filled in. This isn't surprising, since the Canadian
stations send their location as part of the RTCM data only once every 30
minutes (I don't know what the USCG does).

But if you turn the Garmin off and back on again, it immediately displays
the distance to that station. Tune to another frequency then back to the
original, and again it displays the distance immediately. This can only
work if the Garmin is saving the location of the reference station once
it has received it.

Now, it could use a table indexed by frequency, but that wouldn't be too
clever because different stations use the same frequency in different parts
of the country. But DGPS station ID would be a good thing to index with,
since it appears to be a unique number among the official Coast Guard
stations.

If this is true, and if the TAPR DGPSIB does transmit its location as part
of the RTCM stream (I don't know if it does, but all the information necessary
to do so is there), then you should change the station ID if the location of
the station moves. Otherwise, Garmin receivers at least will show an
incorrect station distance for a while.

Anyone know if DGPSIB transmits location?

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] tac2gps aprs traffic

From: "bradley hampton" <bhampton@whidbey.net>
Date: Tue, 4 May 1999 17:01:02 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19145-1999.05.04-19.05.40--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I had a low power(1watt) dgps beacon going on 144.390 for testing.

and one of the local APRS hams told me I was loading his buffers with the corrections.

I had my set up at 2sec update but plan to go to 5-10 sec later I have been working on my system for 30 days and still can't get solid corrections to my garmin 12xl.

I get about 7sec of black bars(gps happy) then 21sec of clear bars, gps still in dgps mode but not happy and the epe jumps all over the place. I am using conv mode and a pactime of A 10 I don't have the equipment to check deviation but each unit has less than 20 hours. I am using a picopacket for the reference station and a kpc3+ for foe rover should I get rid of the pactime command and rely on the <cr> in the RTCM string to trigger the send?

is there any on in my area(40 mi north of seattle who can try to receive my corrections to see if they are being sent ok which tells me I need to work on the receive end.
thanks brad

16. [tacgps] Re: What is station ID?

From: "Steven R. Bible" <srbible@tapr.org>
Date: Tue, 04 May 1999 20:18:03 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19151-1999.05.04-19.23.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 04:24 PM 5/4/99 -0700, you wrote:
>>You can set Station ID to anything you want. Since we are hams and
>>following the lead of W3IWI many set their Station ID to "73". If you have
>>more than one reference station then it would be good to set differing
>>station id values.
>
>Another possible consideration:
>
>Garmin GPS receivers remember where particular DGPS stations are located.
>When you first tune a Garmin receiver to a DGPS station it hasn't used
>before, the "distance to station" field will be blank on the tuning display.
>Later, you'll find it filled in. This isn't surprising, since the Canadian
>stations send their location as part of the RTCM data only once every 30
>minutes (I don't know what the USCG does).
>
>But if you turn the Garmin off and back on again, it immediately displays
>the distance to that station. Tune to another frequency then back to the
>original, and again it displays the distance immediately. This can only
>work if the Garmin is saving the location of the reference station once
>it has received it.
>
>Now, it could use a table indexed by frequency, but that wouldn't be too
>clever because different stations use the same frequency in different parts
>of the country. But DGPS station ID would be a good thing to index with,
>since it appears to be a unique number among the official Coast Guard
>stations.
>
>If this is true, and if the TAPR DGPSIB does transmit its location as part
>of the RTCM stream (I don't know if it does, but all the information
necessary
>to do so is there), then you should change the station ID if the location of
>the station moves. Otherwise, Garmin receivers at least will show an
>incorrect station distance for a while.
>
>Anyone know if DGPSIB transmits location?

Hello Dave, since I am the programmer of the DGPSIB, then I must answer :-)

No, the DGPSIB presently only transmits RTCM Type 1 message. There are two
message type that carry Reference Station information, Type 3 and 7.

Message Type 3 - Reference Station Parameters, is very simply the
Earth-Centered-Earth-Fixed (ECEF) coordinates of the Reference Station.

But the more likely message the Garmin's are using is Message Type 7 -
Radiobeacon Almanac. I'll quote the RTCM documention:

  The radiobeacon almanac provides the location, frequency, service range,
and health information for a network of marine radiobeacons equipped to
transmit differential GPS data. It also provides the identification of the
reference station serving the radiobeacon transmitter. The information
will provide a properly equipped GPS receiver the capability of
automatically selecting the optimum differential data transmitter. The
radiobeacon location data resolution is coarse (0.3 Km in Latitude and 0.6
Km in Longitude), but it provides sufficient accuracy for determining the
next nearest station.

The USCG system transmits Message Type 3, 5, 6, 7, 9, and 16. Sorry, I
don't have the transmission interval of each, but it might be available on
the USCG Navcen web site.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: tac2gps aprs traffic

From: Robert Winingham <kc5ejk@onramp.net>
Date: Tue, 4 May 1999 19:47:02 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-19152-1999.05.04-19.51.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I had a low power(1watt) dgps beacon going on 144.390 for testing.
>
>and one of the local APRS hams told me I was loading his buffers with the corrections.
>
>I had my set up at 2sec update but plan to go to 5-10 sec later I have been working on my system for 30
 days and still can't get solid corrections to my garmin 12xl.
>
>I get about 7sec of black bars(gps happy) then 21sec of clear bars, gps still in dgps mode but not
happy and the epe jumps all over the place. I am using conv mode and a pactime of A 10 I don't have the
equipment to check deviation but each unit has less than 20 hours. I am using a picopacket for the
reference station and a kpc3+ for foe rover should I get rid of the pactime command and rely on the <cr>
 in the RTCM string to trigger the send?
>

1. Just don't use a unpro path that has relay or wide or a digi in it.
    I used 15 sec for testing.

2. Direct connect to GPS FOR TESTING before using TNC/Radio

3. Connect two TNC back to back for TNC testing then use a radio link.

Our APRS buffers are loaded with WX reports and NMEA GPRMC from trackers here
in the Dallas area.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] Re: tac2gps aprs traffic

From: "bradley hampton" <bhampton@whidbey.net>
Date: Tue, 4 May 1999 21:41:10 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19168-1999.05.04-23.45.47--lyris.tacgps#tapr.org@lists.tapr.org>

Rendered body type: text/plain

> I used 15 sec for testing.
>
I was told that garmins needed updates every 12sec or less to keep lock.

thanks for the other info I'll keep working
73brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: tac2gps aprs traffic

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Wed, 05 May 1999 08:17:58 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19205-1999.05.05-07.22.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Maybe we should have an FAQ with all the gotcha's on it?

I have the same tnc's, but the other way around. kpc3+ for the
reference, picopacket for the tracker. That way you can use "adrdisp
off" on the tracker.

I don't use any vias, so my packets don't get digipeated. I just use "un
dgps". Of course I'm only interested in special event type uses. I take
it on the road to orienteering events, and if I'm in an area with a lot
of APRS traffic (Sweetwater Creek State Park, on a hill overlooking
Atlanta, GA) I use a different packet frequency, like 144.990.

I have connected the DGPSIB and the garmin directly, and also done a
"keyboard to keyboard" connect between the tnc's for testing. I have
found that my picopacket needs to have echo off and flow off before it
will work reliably. The setting of pactime doesn't seem to matter.

I send the corrections every 8 seconds, but you only have to miss 2 or 3
for it to go from 3D DIFF to 3D NAV. If you carry an extra HT, you can
hear the regular DGPS squawks like clockwork. If you can't hear them,
then you know why the Garmin is loosing DIFF.

If you were like me, and did not have a lot of packet experience, then
it helps to do some keyboard to keyboard QSO's or connect to a PBS just
to get a feel for how it all works. That has helped my troubleshooting
skills.

--
Sam Smith
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Re: tac2gps aprs

From: "bradley hampton" <bhampton@whidbey.net>
Date: Wed, 5 May 1999 06:31:14 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19208-1999.05.05-08.36.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the great info. for the Rover KPC3 I am using the MYHEADER off ,I
hope that is doing the same as the adrdisp command if not please let me
know.
also have you found a command that will let the picopacket powerup in
converse mode the kpc3 has a PMODE command.
I think I'll switch them again put the kpc in the ref end and see how it
works.
and I am going to look for a nice quiet freq. till I get it set up.

SO you have a KPC3+ hooked to your DGPS in to a HT(reference sta) to another
HT into a picopacket then to a   garmin?
can you give me the commands you use on each of your tnc's
thanks the best info I have received yet!
Brad Hampton KC7MRP 48 30'N 122 40'W

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] Re: tac2gps aprs

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Wed, 05 May 1999 10:29:09 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19219-1999.05.05-09.33.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

bradley hampton wrote:

> SO you have a KPC3+ hooked to your DGPS in to a HT(reference sta) to another
> HT into a picopacket then to a garmin?
> can you give me the commands you use on each of your tnc's

Bradley,
The ref station is a laptop, radio, kpc3+, dgpsib. I have rigged a
serial cable with 2 switches. the first switches between the tnc and the
dgpsib. I set the switch to the dgpsib and use tac32 to set it up. The I
switch to the tnc, close tac32 and start WinAPRS. I bring up a terminal
window and type:
"un dgps"
"bt DGPS Correction Sam Smith KF4PWH"
"b e 10"
"conv"
Then I flip the other switch, which disconnects TxD from the computer to
the tnc and connects TxD from the DGPSIB to the tnc. I exit from the
terminal window but leave WinAPRS running. It will hear all the packets,
but when it tries to transmit nothing gets out. It doesn't seem to
really notice. Logging still works OK. Whenever data arrives at the tnc
from the DGPSIB, it transmits.

The tracker is an HT, a picopacket, and a Garmin GPS12XL. I set up the
tnc like this:
4800 baud
"my kf4pwh-2"
"un gpshs" -> shows up as a jogger in WinAPRS
"gpstext $GPRMC"
"loc e 3" -> 30 seconds
"flow off"
"lpath gpshs" -> I don't know if this is needed
"adrdisp off"
"echo off"
"gps on"

My picopacket will stay in gps mode through power cycles, so once it is
set, I can just power it on and off. I had to put RF chokes on both
cables into the picopacket to keep it from resetting. (which is a real
pain). No vias, so unless you hear my packets direct, you don't know I'm
there. I QSY to another packet frequency if I think 4.39 is too busy. No
one really wants to watch me jog around in the woods, do they?

All this is done from the tailgate of my truck before the orienteering
meet starts.

Now you know all my secrets. Of course I typed this from memory, so I
may have made a mistake.

--
Sam Smith
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Re: [tacgps]Diff Station Problems

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Wed, 5 May 1999 11:44:00 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19233-1999.05.05-10.48.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have been testing with 2 DGPS stations set up by Doug Bade in
Cleveland. I have noticed
"funny" operation with my Magellean Meridian XL GPS. Sometimes it won't enter
differential mode.
Then it will lock for a 1/2 hour to an hour, and then drop out. Some evenings
it never locks. Here is a
copy of my latest letter to him.

"
 On Sun. I reconnected everything, and it worked for an hour. I started
with the commercial freq. first.
The GPS went into diff mode right away. I then switched to the ham freq. and it
stayed in DGPS mode
for about an hour and then dropped out. I waited about 10 min. , but it didn't
go back to DGPS.
I thought at first that the PK-232 might be "eating" some characters in the
packets, but I put a computer
on a "TEE", and the packets looked OK, and continued to go to the GPS unit.
When the GPS dropped
out, it went into 2D mode (i.e. it could only find 3 satellites to lock onto).
I guess the best explaination
is that you weren't sending corrections for all 3 satellites that I was locked
to, so my GPS unit
dropped out of DGPS mode. Have you seen anything like this before?
"

 I have done an analysis of the packet data, and it appears that the
last data word in the RTCM
message is truncated by 3 bytes. I don't know if the TAPR board is at fault,
the transmitting packet
controller is "eating" some bytes, or if my PK-232 is lying to me. I am sending
the data to TAPR, so
I won't bother the "TACGPS" group with the large attachment.
  Jim Korenz N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Re: tac2gps aprs

From: Dave Martindale <davem@cs.ubc.ca>
Date: Wed, 5 May 1999 09:22:52 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19249-1999.05.05-12.39.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>bradley hampton wrote:
>I QSY to another packet frequency if I think 4.39 is too busy. No
>one really wants to watch me jog around in the woods, do they?

Oh come on, that must be at least as interesting as watching people drive
their cars from point to point. It would be even more interesting if all
of the people in the orienteering event had APRS trackers - then you could
"play back" the race for all of the participants after it was over.
Maybe you'd have to switch to FRS radios to do that, unless it was a
all-ham orienteering meet.

The same would be true of bicycle races.

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

24. [tacgps] Re: tac2gps aprs

From: Robert Winingham <kc5ejk@onramp.net>
Date: Wed, 5 May 1999 12:47:16 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19253-1999.05.05-12.51.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>and I am going to look for a nice quiet freq. till I get it set up.

You should try 144.390 first. The old APRS frequency of 145.790
might be ok in your area for a short test. Just don't have the
TNC to be xmit only.

See :
http://www.dididahdahdidit.com/

for a U.S. APRS 2m frequency coverage map.

Also check the archives for this sig and read mail from
Dr Thomas A Clark (W3IWI) and his W3IWI-13 DGPS beacon.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] Re: [tacgps]Diff Station Problems

From: Robert Winingham <kc5ejk@onramp.net>
Date: Wed, 5 May 1999 12:48:21 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19254-1999.05.05-12.52.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

PACLEN 0   This sets the TNC to not break up packets unless
the length of the information exceeds 256 characters; if it were to break them at a
smaller size, it is possible that your packets would not be interpreted as valid positions
by APRS. GPS packets will not exceed about 80 characters, but, sometimes, PACLEN is set as
low as 70 or 72!

This information is from the APRS tracker set up documentation.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] Re: tac2gps aprs

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Wed, 05 May 1999 13:49:21 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19255-1999.05.05-12.53.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dave Martindale wrote:
> Oh come on, that must be at least as interesting as watching people drive
> their cars from point to point. It would be even more interesting if all
> of the people in the orienteering event had APRS trackers - then you could
> "play back" the race for all of the participants after it was over.
> Maybe you'd have to switch to FRS radios to do that, unless it was a
> all-ham orienteering meet.
>
> The same would be true of bicycle races.
>
>   Dave

I'm putting together my second tracker now. When complete trackers cost
about $49 AND are foolproof then we might have the woods full of
orienteers being tracked. And a lot of new hams.

I got my new vanity call sign today: N4MAP
--
Sam Smith N4MAP, formerly KF4PWH
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] Re: [tacgps]Diff Station Problems

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Wed, 5 May 1999 13:57:32 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19256-1999.05.05-13.02.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The plot thickens. The Magellean is in sync when the incomplete last word
contains "fill" bytes.
That is, the last word has no correction data (less than 8 satellites). If the
last word has a
valid correction for the 8th satellite, then the GPS unit rejects the entire
RTCM message
and drops out of DGPS mode.
  Jim Korenz N8PXW

---------- Forwarded by Jim Korenz/NA/GDYR on 05/05/99 01:55 PM
----

bounce-tacgps-5599@lists.tapr.org on 05/05/99 11:44:37 AM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Re: [tacgps]Diff Station Problems

 I have been testing with 2 DGPS stations set up by Doug Bade in
Cleveland. I have noticed
"funny" operation with my Magellean Meridian XL GPS. Sometimes it won't enter
differential mode.
Then it will lock for a 1/2 hour to an hour, and then drop out. Some evenings
it never locks. Here is a
copy of my latest letter to him.

"
 On Sun. I reconnected everything, and it worked for an hour. I started
with the commercial freq. first.
The GPS went into diff mode right away. I then switched to the ham freq. and it
stayed in DGPS mode
for about an hour and then dropped out. I waited about 10 min. , but it didn't
go back to DGPS.
I thought at first that the PK-232 might be "eating" some characters in the
packets, but I put a computer
on a "TEE", and the packets looked OK, and continued to go to the GPS unit.
When the GPS dropped
out, it went into 2D mode (i.e. it could only find 3 satellites to lock onto).
I guess the best explaination
is that you weren't sending corrections for all 3 satellites that I was locked
to, so my GPS unit
dropped out of DGPS mode. Have you seen anything like this before?
"

 I have done an analysis of the packet data, and it appears that the
last data word in the RTCM
message is truncated by 3 bytes. I don't know if the TAPR board is at fault,
the transmitting packet
controller is "eating" some bytes, or if my PK-232 is lying to me. I am sending
the data to TAPR, so
I won't bother the "TACGPS" group with the large attachment.
  Jim Korenz N8PXW

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Re: [tacgps]Diff Station Problems

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Wed, 5 May 1999 14:07:46 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19257-1999.05.05-13.12.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the info. I don't think this is happening because the next packet
starts a new RTCM
message. If the packet were "split" I would expect to see the "missing" bytes
in the next
transmission.
  Jim Korenz

bounce-tacgps-5599@lists.tapr.org on 05/05/99 01:49:08 PM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Re: [tacgps]Diff Station Problems

PACLEN 0   This sets the TNC to not break up packets unless
the length of the information exceeds 256 characters; if it were to break them
at a
smaller size, it is possible that your packets would not be interpreted as
valid positions
by APRS. GPS packets will not exceed about 80 characters, but, sometimes,
PACLEN is set as
low as 70 or 72!

This information is from the APRS tracker set up documentation.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] Re: [tacgps]Diff Station Problems

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Wed, 05 May 1999 20:12:20 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19288-1999.05.05-15.18.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry I haven't chimed in with more comments -- I'm at home
recovering from a triple bypass a few weeks ago.

One more thing to check on your TNC setup. Be sure to disable
the PASS character by entering the command PASS 0

Regarding the data field lengths. The basic RTCM message
follows the GPS ICD-200 message format, with 24 bits of data
followed by a 6-bit check-sum to make blocks that are
intrinsically 30 bits long. Any RTCM message consists of
full blocks of such data.

On the ~300 kHz (i.e. Coast Guard) beacons, this data stream
is transmitted at either 50, 100 or 200 bits/sec continuously
(data rate depends on local requirements and how much power the
VLF xmtr is running). Therefore the new block "frames" happen
every 0.6, 0.3 or 0.15 seconds.

As far as I know, all the user VLF receivers (like the Garmin
GBR-21) and the commercial "buy the bits" services (DCI, AcquPoint)
provide these bits to your receiver in ASCIIfied format. The
6-bit 50/100/200 bit/sec "characters" are made into printable
8N1 ASCII characters (i.e. a total of 8 data bits, plus a start
and stop bit) and sent to your receiver at a standard speed like
4800 bits/sec. At 4800, this means that 480 of the original

6-bit "characters" can be sent each second.

Steve's TAPR DGPS widget makes this ASCIIfied stream directly,
and your TNC is supposed to act as if it were just a piece of wire.
Since the original message consists of 30 bit = 5 characters
symbols, information in your packets should always be be 5*N
characters long. In practice, the 5*N character Type-1 message
is terminated with a <cr> (or maybe <cr><lf>), so the real packet
should have 5*N+1 (or perhaps 5*N+2) characters in it (plus, of
course, all the AX.25 the packet overhead).

Your GPS receiver SHOULD look for the 30-bit long fields and do
the internal error checking, ignoring any other packet racket.
I say SHOULD because apparently GARMIN (and perhaps others) do in
fact care about the non-RTCM "garbage" (receivers like the
Motorola ONCOREs properly consider only 30-bit chunks that pass
the data validity test, and don't care if other bits appear on
their serial input port).

All the stuff about the W3IWI-13 DGPS beacon on the TAPR web site
refers to past history. 145.79 was, back then, the APRS frequency.
I ended up with a refresh rate of 15 sec, not the 20 sec that was
quoted. IWI-13 made use of a professional Trimble 4000SSE GPS rcvr,
not a TAPR board. IWI-13 has been off-the-air for about 2 years now.

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] Mic-Lite and FRS

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Wed, 5 May 1999 16:24:27 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19290-1999.05.05-15.29.17--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> It would be even more interesting if all of the people in the
> orienteering event had APRS trackers - then you could
> "play back" the race for all of the participants after it was over.
> Maybe you'd have to switch to FRS radios to do that...

The neat thing about the Mic-Lite circuit I mentioned yesterday is that
the Mic-Lite with internal 9v battery only has a 2 wire interface to any
HT that uses a single Mic wire circuit (ICOM, Yeasu, ALinco etc). I
noticed that ALL the FRS radios at Radio Shack use the same combined PTT
circuit. In fact, I have been using an FRS radio for my testing since it
was handy.

And since it is in Mic-E mode, I think it is perfectly legal, since it is
only a burst on the END of your voice transmission. No attempt is being
made here to establish a digital channel. That would be illegal.

de WB4APR, Bob

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: [tacgps]Diff Station Problems

From: Ray Vaughan <ray@rayvaughan.com>
Date: Wed, 05 May 1999 16:32:42 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19293-1999.05.05-15.37.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>As far as I know, all the user VLF receivers (like the Garmin
>GBR-21) and the commercial "buy the bits" services (DCI, AcquPoint)
>provide these bits to your receiver in ASCIIfied format. The
>6-bit 50/100/200 bit/sec "characters" are made into printable
>8N1 ASCII characters (i.e. a total of 8 data bits, plus a start
>and stop bit) and sent to your receiver at a standard speed like
>4800 bits/sec. At 4800, this means that 480 of the original
>6-bit "characters" can be sent each second.

This is the type of DGPS unit I picked up recently. Does it really stream
this constantly? Or only at certian intervals? Seems like a lot of
repeated data.

How would I best get this date stream on the air for others to use?
Standard TNC? Or one with the GPS interface only?

I'm leaning toward a separate 440 frequency. That way it can be used by
other hams who need DGPS, and it's a few less bits on an already overloaded
band. I know it makes the tracker a bit more complicated, I think the
results might make it worthwhile.

Thanks

Ray, KD4BBM

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] Re: [tacgps]Diff Station Problems

From: "bradley hampton" <bhampton@whidbey.net>
Date: Wed, 5 May 1999 18:19:44 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19335-1999.05.05-20.24.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have my new DGPS set to default everything except I have it set for
4800Baud.
right now it is talking to a picopacket then into a radio shack HTX-404
440Mhz
I had some one tell me that I was flooding his aprs buffers? 144.39 with 1
watt.

then to an icom T8 the triband HT 6m 2m and 440 going in to my KPC3+ then in
to my Garmin 12xl
I am getting corrections for about 10 sec then while still in DGPS mode it
does not seem to get corrections for about 20 sec. I have the DGPS sending
updates at a rate of 2sec so i would expect solid corrections.

I am getting an epe of 300 feet and some times I get unacceptable EPE turn
off and re-init?

I am going to add chokes in the reference end to make sure things are clean
but I thin the problem is in setting up the packets.

thanks brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

33. [tacgps] Re: [tacgps]Diff Station Problems

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 05 May 1999 21:56:35 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19343-1999.05.05-21.02.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I am going to add chokes in the reference end to make sure things are clean
>but I thin the problem is in setting up the packets.

Brad, you haven't mentioned if you've set the deviation on both TNC/Radio
systems?

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

34. [tacgps] Re: [tacgps]Diff Station Problems

From: "bradley hampton" <bhampton@whidbey.net>
Date: Wed, 5 May 1999 20:27:34 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19356-1999.05.05-22.33.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I don't beleve I have the equipment to set the deviation on my tnc or I
don't know how to.

>Brad, you haven't mentioned if you've set the deviation on both TNC/Radio
>systems?
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] deviation setting for KPC-3 plus

From: Robert Winingham <kc5ejk@onramp.net>
Date: Thu, 6 May 1999 03:40:27 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: bhampton@whidbey.net
Message-ID: <LYR6754-19395-1999.05.06-03.44.59--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I don't beleve I have the equipment to set the deviation on my tnc or I
>don't know how to.

The KPC-3 plus has a default setting of 100

XMITLVL 100

This is way too much for the Radio Shack HTX-202 and the same might be
true for the HTX-404 units.

I have several HTX-202 2m units working with the KPC-3+ and I had
to set XMITLVL to 6 or 7 to get a 3.0 - 3.5 KHZ deviation.

I used a AEA DM-1 Deviation Meter.

There is no pot to turn on the KPC-3 plus TNC . You can even set the value
via remote login from another packet system.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

36. [tacgps] Re: Mic-Lite and FRS

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Thu, 06 May 1999 08:26:51 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19414-1999.05.06-07.31.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob Bruninga wrote:
>
> The neat thing about the Mic-Lite circuit I mentioned yesterday is that
> the Mic-Lite with internal 9v battery only has a 2 wire interface to any
> HT that uses a single Mic wire circuit (ICOM, Yeasu, ALinco etc). I
> noticed that ALL the FRS radios at Radio Shack use the same combined PTT
> circuit. In fact, I have been using an FRS radio for my testing since it
> was handy.
>

Yeah but the Orienteers need dgps. Isn't the Mic-lite transmit only?

--
Sam Smith N4MAP

Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] Re: deviation setting for KPC-3 plus

From: John Ackermann <jra@febo.com>
Date: Thu, 06 May 1999 08:43:11 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19416-1999.05.06-07.47.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I wasn't quite ready to announce this yet, because there's still quite a
bit of work to be done, but I'm putting together some information on
"layer-one" (e.g., radio and modem) issues at my web site, and I have a
page which describes why overrdriving the transmit audio is bad, and
several ways to measure and adjust it.

Go to http://www.febo.com/layer-one/index.html and then click on the
link for "transmit audio." Although much of the layer-one directory is
still under construction, this page is pretty well finished (feel free to
look at the other stuff, too, if you'd like -- just realize it's subject
to change). I'd welcome any feedback.

73,
John N8UR
jra@febo.com
http://www.febo.com

In message <LYR5592-19395-1999.05.06-03.44.59--JRA#FEBO.COM@lists.tapr.org>, Ro
bert Winingham writes:
>>I don't beleve I have the equipment to set the deviation on my tnc or I
>>don't know how to.
>
>
>
>The KPC-3 plus has a default setting of 100
>
>XMITLVL 100
>
>This is way too much for the Radio Shack HTX-202 and the same might be
>true for the HTX-404 units.
>
>I have several HTX-202 2m units working with the KPC-3+ and I had
>to set XMITLVL to 6 or 7 to get a 3.0 - 3.5 KHZ deviation.
>
>I used a AEA DM-1 Deviation Meter.
>
>There is no pot to turn on the KPC-3 plus TNC . You can even set the value
>via remote login from another packet system.
>
>
>73
>
>
>-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----
>
>
>---
>You are currently subscribed to tacgps as: JRA@FEBO.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] Re: deviation setting for KPC-3 plus

From: "bradley hampton" <bhampton@whidbey.net>
Date: Thu, 6 May 1999 05:51:07 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19417-1999.05.06-07.55.50--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks! this is very helpfull sorry to be asking so many questions but after
a month I knew I needed help, and you know what thay say.
knowing you need help is the first step to recovery <grin>

>I have several HTX-202 2m units working with the KPC-3+ and I had
>to set XMITLVL to 6 or 7 to get a 3.0 - 3.5 KHZ deviation.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

39. [tacgps] Re: Mic-Lite and FRS

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Thu, 6 May 1999 09:33:54 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19425-1999.05.06-08.38.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 6 May 1999, Sam Smith wrote:

> Yeah but the Orienteers need dgps. Isn't the Mic-lite transmit only?

Yes it is. Its advantage is its size. I would think that no
oreinteering person will carry anything much larger...

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

40. [tacgps] Re: [tacgps]Diff Station Problems

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 06 May 1999 14:23:59 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19459-1999.05.06-13.31.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:27 PM 5/5/99 -0700, you wrote:
>I don't beleve I have the equipment to set the deviation on my tnc or I
>don't know how to.
>
>>Brad, you haven't mentioned if you've set the deviation on both TNC/Radio
>>systems?

You have GOT to do this!!

Either purchase or borrow a deviation meter, or better yet, find someone
with a service monitor. The instructions on how to set the deviation is in
the TNC manuals.

The simplest method if you do not have equipment is to place a dummy load
on the transceiver in test. Use another radio to monitor. Place the TNC
in CAL mode and adjust to lowest setting first then increase. When you
hear the tone stop increasing stop, back off just a tad. This proceedure
will get you in the ballpark.

Improperly adjusted deviation will cause numerious problems. Many of with
is the unrealiable transmission of data.

- Steve
 (n7hpr@tapr.org)
 (n7hpr@amsat.org)

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] Re: [tacgps]Diff Station Problems

From: Remi Hutin <hutin@sugar-land.spc.slb.com>
Date: Thu, 06 May 1999 14:15:24 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19462-1999.05.06-14.20.17--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 01:23 PM 5/6/99 , you wrote:
>At 08:27 PM 5/5/99 -0700, you wrote:
>>I don't beleve I have the equipment to set the deviation on my tnc or I
>>don't know how to.
>>
>>>Brad, you haven't mentioned if you've set the deviation on both TNC/Radio
>>>systems?
>
>
>You have GOT to do this!!
>
>Either purchase or borrow a deviation meter, or better yet, find someone
>with a service monitor. The instructions on how to set the deviation is in
>the TNC manuals.
>
>The simplest method if you do not have equipment is to place a dummy load
>on the transceiver in test. Use another radio to monitor. Place the TNC
>in CAL mode and adjust to lowest setting first then increase. When you
>hear the tone stop increasing stop, back off just a tad. This proceedure
>will get you in the ballpark.
>
Yes but you need to do it on the highest tone NOT on the lowest one.

The John (N8UR) setting your TNC's audio drive level document at :
http://www.febo.com/layer-one/transmit.html
is an excellent one.

Remi W5/F6CNB

>Improperly adjusted deviation will cause numerious problems. Many of with
>is the unrealiable transmission of data.
>
>
>- Steve
> (n7hpr@tapr.org)
> (n7hpr@amsat.org)
>
>
>---
>You are currently subscribed to tacgps as: RHUTIN@SLB.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

42. [tacgps] Re: [tacgps]Diff Station Problems

From: John Ackermann <jra@febo.com>
Date: Thu, 06 May 1999 17:15:59 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19476-1999.05.06-16.20.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just to add to Steve's message -- in CAL mode, if you can toggle between
tones, select the high tone, not the low one, for this test. Due to
pre-emphasis in the transmitter, if you set using the low tone the high
tone will almost certainly be clipped.

If you can't toggle to a single tone, alternating high/low tones should
work reasonably well as a substitute

John N8UR
jra@febo.com

In message <LYR5592-19459-1999.05.06-13.31.11--JRA#FEBO.COM@lists.tapr.org>, "S
teven R. Bible" writes:
>At 08:27 PM 5/5/99 -0700, you wrote:
>>I don't beleve I have the equipment to set the deviation on my tnc or I
>>don't know how to.
>>
>>>Brad, you haven't mentioned if you've set the deviation on both TNC/Radio
>>>systems?
>
>
>You have GOT to do this!!
>
>Either purchase or borrow a deviation meter, or better yet, find someone
>with a service monitor. The instructions on how to set the deviation is in

>the TNC manuals.
>
>The simplest method if you do not have equipment is to place a dummy load
>on the transceiver in test. Use another radio to monitor. Place the TNC
>in CAL mode and adjust to lowest setting first then increase. When you
>hear the tone stop increasing stop, back off just a tad. This proceedure
>will get you in the ballpark.
>
>Improperly adjusted deviation will cause numerious problems. Many of with
>is the unrealiable transmission of data.
>
>
>- Steve
> (n7hpr@tapr.org)
> (n7hpr@amsat.org)
>
>
>---
>You are currently subscribed to tacgps as: JRA@FEBO.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

43. [tacgps] Re: [tacgps]Diff Station Problems

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Fri, 07 May 1999 03:14:59 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19525-1999.05.06-22.20.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve wrote to Brad:
>
> Either purchase or borrow a deviation meter, or better yet, find someone
> with a service monitor. The instructions on how to set the deviation is in
> the TNC manuals.

Here is a simple, NO TEST EQUIPMENT trick to set the deviation, assuming
you have TWO radios.

(1) Start transmitting packets and listen on the 2nd radio.

(2) Crank the TX audio level down until you can notice the RX audio
    on the 2nd radio decrease.

(3) Turn the TX audio down a bit more. When you started, the sound
    from the speaker probably sounded "mushy". When you crank it down,
    it will sound much more "crisp".

In addition to the TX audio level inside the TNC, you may also
have tweak the deviation potentiometer inside the radio, but start
with the one on the TNC.

This will nearly always get you about 3-3.5 kHz deviation! Every radio
I have seen since the early 80's had the deviation level too high!

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

44. [tacgps] Re: deviation

From: "bradley hampton" <bhampton@whidbey.net>
Date: Thu, 6 May 1999 22:35:31 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19557-1999.05.07-00.40.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for te info I set my deviation to 7 to try to get things under
control.

I have the kpc on the reference end and got it all set up using all the
input I have received and the dgps it sending updates at 2sec.

I moved about a mile away and was able to receive the signal and run it in
to my picopacket then to my garmin 12xl

and I am still getting 10sec of corrections and 20 sec with out over and
over.

I connected my laptop to the tnc and ran rtcmon.exe and I could see the
corrections update as each one came in. they looked good.

any ideas?

I am going to compile my commands and send another message and see if I
missed any thing
later brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

45. [tacgps] TESTING DGPSIB without a radio

From: Robert Winingham <kc5ejk@onramp.net>
Date: Fri, 7 May 1999 01:42:45 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: bhampton@whidbey.net
Message-ID: <LYR6754-19566-1999.05.07-01.47.36--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Step One:
Connect the DGPSIB direct to GPS and see if it works.

Step Two:
BEFORE doing a radio to radio test, connect the two tnc's back to back
(front to front might be a better term)

Please try connecting the TNC's radio port audio output line to the other
TNC's audio input line. This is a one way test so you don't need to do
both ways.

Then use one TNC's RS-232 port (input) to connect to the DGPSIB (output)
and the other TNC's RS-232 port (output) to a GPS NEMA (input) line.

If you are not using the same TNC for both ends then also run the test
the other direction as the tnc parameter many be different.

There are many steps where something may be set wrong
cables, tnc parameters, baud rates, GPS, DGPSIB.

You must test the setup step by step. I found it much easier
to do all this in the same room.

If can also use a comm program to replace the GPS and collect the
data to match with the original data if you suspect the TNC is eating
any of the data. An incorrectly set tnc will not pass some of the ASCII data.

Make a set of RS-232 Y cables so you can monitor with a computer at any point.
You can wire*OR (Tap) the RS-232 receive lines to feed into the computer.
Don't connect two RS-232 xmit lines together.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

46. [tacgps] GPS Anomaly... (???)

From: "Martin Boissonneault (E-mail)" <ve2mrx@iname.com>
Date: Sat, 8 May 1999 23:57:48 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19840-1999.05.08-23.02.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All!
        On May 6th, I used SA Watch to average my position while I went away. I
already have a good average of my position, so any variance of the average
greater than about 5 meters mean that the average is not good. After many

hours of logging, I took a look and saw 38 meters of difference !!!

        After some log analysis, I saw that for a few minutes around 11:00 UTC, the posit was over 17 km away!!! Even weirder was the altitude... 15 km!!! (I never though I could fly using only a GPS!)

        Now for the bad part: The log shows that the GPS is tracking 6 SV's but the PRNmask value shows only 5... The suspected PRN is #17... As soon as the PRN# 17 comes in view, Wop!

        All this occurred between 10:52 UTC and 11:11 UTC on May 6th 1999. The HDOP was 1.9 the whole time. The GPS receiver is a Motorola Oncore VP+, software v10.0

        Anyone know why?

                Martin VE2MRX, Beloeil, Quebec, Canada.

[E_O_MSG]

mailto:ve2mrx@iname.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

47. [tacgps] Re: GPS Anomaly... (???)

From: "Ira A. Wilner" <bdcst@sover.net>
Date: Sun, 9 May 1999 10:06:45 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19897-1999.05.09-09.28.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Martin Boissonneault (E-mail) <ve2mrx@iname.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Saturday, May 08, 1999 11:58 PM
Subject: [tacgps] GPS Anomaly... (???)

>Hi All!
>I took a look and saw 38 meters of difference !!!

> Now for the bad part: The log shows that the GPS is tracking 6 SV's but the
>PRNmask value shows only 5... The suspected PRN is #17... As soon as the
>PRN# 17 comes in view, Wop!
>
>
> Anyone know why?

Wasn't PRN 17 the bird the DoD was using for Y2K testing at about that time? It did create anomolies for some users, especially timing issues even though the status bit was set to bad.

--Ira
W1IRA

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

48. [tacgps] Re: GPS Anomaly... (???)

From: Michael Tang <michael@singapore.geco-prakla.slb.com>
Date: Sun, 09 May 1999 19:35:54 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19930-1999.05.09-13.39.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Martin,

Please find the information below which might explain the anomaly of your systems outage / bust of 34 metres.

Best regards
Michael

FM 2SOPS SCHRIEVER AFB CO//DOAN//
UNCLAS
NOTICE ADVISORY TO NAVSTAR USERS (NANU) 1999060
SUBJ: SVN17 (PRN17) FORECAST OUTAGE JDAY 130/1630 - JDAY 131/0430
1. NANU TYPE: FCSTMX
NANU NUMBER: 1999060
NANU DTG: 062249Z May 1999
REFERENCE NANU: N/A
REF NANU DTG: N/A
SVN: 17
PRN: 17
START JDAY: 130
START TIME ZULU: 1630
START CALENDAR DATE: 10 MAY 1999
STOP JDAY: 131
STOP TIME ZULU: 0430
STOP CALENDAR DATE: 11 MAY 1999
2. CONDITION: GPS SATELLITE SVN17 (PRN17) WILL BE UNUSABLE ON JDAY 130
(10 MAY 1999) BEGINNING 1630 ZULU UNTIL JDAY 131 (11 MAY 1999)
ENDING 0430 ZULU.
3. POC: CIVILIAN - NAVCEN AT (703)313-5900, HTTP://WWW.NAVCEN.USCG.MIL
MILITARY - CAPT TONY OCCHI, 2 SOPS NAVIGATION ANALYST, DSN 560-6378,
COMM 719-567-6378, GPS@SCHRIEVER.AF.MIL, HTTP://WWW.SCHRIEVER.AF.MIL/GPS
RECEIVED AT USNO 07 MAY 1999

****

At 11:57 PM 5/8/99 -0400, you wrote:
>Hi All!
> On May 6th, I used SA Watch to average my position while I went away. I
>already have a good average of my position, so any variance of the average
>greater than about 5 meters mean that the average is not good. After many
>hours of logging, I took a look and saw 38 meters of difference !!!
>
> After some log analysis, I saw that for a few minutes around 11:00 UTC, the
>posit was over 17 km away!!! Even weirder was the altitude... 15 km!!! (I
>never though I could fly using only a GPS!)
>
> Now for the bad part: The log shows that the GPS is tracking 6 SV's but the
>PRNmask value shows only 5... The suspected PRN is #17... As soon as the
>PRN# 17 comes in view, Wop!
>
> All this occurred between 10:52 UTC and 11:11 UTC on May 6th 1999. The HDOP
>was 1.9 the whole time. The GPS receiver is a Motorola Oncore VP+, software
>v10.0
>
> Anyone know why?
>
> Martin VE2MRX, Beloeil, Quebec, Canada.
>
>[E_O_MSG]
>
>mailto:ve2mrx@iname.com
>---
>
>
>---
>You are currently subscribed to tacgps as: Mtang1@slb.com
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

49. [tacgps] RE: GPS Anomaly... (???)

From: "Martin Boissonneault (E-mail)" <ve2mrx@iname.com>
Date: Sun, 9 May 1999 17:17:52 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-19944-1999.05.09-16.22.35--lyris.tacgps#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Hi again.
        Yes, I have doubts about that Y2K problem (Januark will look funny on the calendar :)), but after reviewing all NANU's of that time period, none of them involved PRN# 17, and again, I never had any problems before. With at least 3 or 4 NANU's every month, I should have had some sign before...

        I have this GPS receiver for 6 months now, and believe that Motorola implemented the specs correctly.

        BTW, the SVN/PRN# 27 was the one used for the Y2K testing. It went from 0902 to 2004 UTC on May 1st 1999. No NANU's have been issued for the "glitch" on May 6th.

                Martin VE2MRX, Beloeil, Quebec, Canada.

[E_O_MSG]

mailto:ve2mrx@iname.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

50. [tacgps] Re: Garmin 12xl dgps updates?

From: "bradley hampton" <bhampton@whidbey.net>
Date: Sun, 9 May 1999 22:47:26 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-20056-1999.05.10-00.52.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello it's me again, I am still working on my dgps system.

I connected my lap top to the rover tnc and used rtcmon.exe to allow me to see the corrections and watched it for 2-3 hours and it looked solid.

my gps while in diff mode is still doing that 10sec on and about 20sec off I am using a 2sec transmission on the dgps   I would like to know what rate most people are feeding there garmins with?

if I slow down to the 8-10 sec range will this help? could there be some kind of buffer in the gps or the tnc that holds the data for 20sec? it does not do it while attached to the computer.

I am using signal out and ground   should I tie the cts/rts together? for to keep the data moving?

thanks brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

51. [tacgps] Re: Garmin 12xl dgps updates?

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Mon, 10 May 1999 09:44:59 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-20095-1999.05.10-08.49.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

bradley hampton wrote:
>
> my gps while in diff mode is still doing that 10sec on and about 20sec off I
> am using a 2sec transmission on the dgps   I would like to know what rate
> most people are feeding there garmins with?
>
I'm using an 8 second rate. I set up a digipeater this weekend to repeat the DGPS signals over a big hill with a radio shadow on one of our orienteering maps. Worked fine, even when I was hearing the corrections direct and repeated.
--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam

http://www.mindspring.com/~sam.smith

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

52. [tacgps] TAPR Dayton Activities 1999

From: Greg Jones <wd5ivd@tapr.org>
Date: Tue, 11 May 1999 21:54:45 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-20439-1999.05.11-22.33.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR Dayton Activities 1999
for details visit: http://www.tapr.org/tapr/html/Fdayton.html

We will be at our normal booth spaces (542 & 543)
Come on by and say hi!

Friday Morning - TAPR Digital Forum
Friday Evening - TAPR PACK*BASH

TAPR Digital Forum on Friday

The schedule for the TAPR digital forum is:
        10:00 - 10:05am (5 min)
              Introduction to Forum, John Ackermann, N8UR

        10:05 - 10:30am (25min)
              TAPR Update, Greg Jones, WD5IVD

        10:30 - 11:00am (30 min)
              Linux AX.25 Update, John Ackermann, N8UR

        11:00 - 11:30am (30 min)
              PIC Development Update, Steve Bible, N7HPR and John Hansen, W2FS

        11:30 - 12:00noon (30 min)
              GPS Projects, Steve Bible, N7HPR

        12:00noon - 12:30pm (30 min)
              Compact Flash Card Project, John Koster, W9DDD

        12:30 - 1:00pm (30 min)
              TAPR APRS News, Steve Dimse, K4HG and Stan Horzepa, WA1LOU

        1:00pm - 1:45pm (45 min)
             FHSS Radio Project Update, Tom McDermott, N5EG

Attending the 1999 Dayton Hamvention? Then don't miss out on PACK*BASH!

What?
       An event for the digitally-inclined ham, featuring:
        * Buffet dinner
        * "A Little Technology Goes a Long Way" -- Keynote address
                by Dave Pederson, N7BHC
        * TAPR special interest group meetings
        * "Birds of a Feather" gatherings

When?
        Friday evening, May 14, 1999
        Doors open at 7:00 pm; dinner served at 7:30 pm
        Speaker and meetings after dinner

Where?
        NCR "Sugarcamp" Conference Center, 101 W. Schantz Ave. --
        South of downtown Dayton, just west of Main St. (Rt 48).
        Maps available on the TAPR web site (www.tapr.org) or at the
        TAPR booth.

How?
        Dinner requires advance registration and payment through TAPR.
        Tickets will be available at the TAPR booth on Friday. The cost

is $20.00 per person, tax and tip included.

All amateurs are welcome to attend, enjoy the speaker, and particpate in the meetings, although only those purchasing a dinner can eat.

Who?
PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet Radio, the national leader in digital communication -- and the Miami Valley FM Association, Dayton's packet radio club.

For more information (including maps), go to
http://www.tapr.org/tapr/html/dayton.html,
or send email to tapr@tapr.org.

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

53. [tacgps] Rasant homemade decoders ?

From: Eduardo Jacob <edu@kender.es>
Date: Fri, 14 May 1999 23:25:18 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-20824-1999.05.14-16.30.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have just learned that the whole national EA territory is (and other european members are already or planning to be) covered with DGPS information sent in RASANT format in the RDS (Radio Data System) in FM broadcast. I have found that there are receivers available for it at a little less that the price of a top level hanheld GPS receiver.

Curiously, they transmit a unique DGPS correction obtained in Madrid (almost the centre of the country) and they use it through all the territory. I thougth that every FM repeater would send it's own correction but, it's always the same. Well, Canary Islands have their own DGPS correction. This is against something I thougth previuosly, that a correction is valid for about 200Km. They have tested it until about 400 Km, and they say that the error is about 1 or 2 meters.

Does anybody know if there is sources for decoding the RDS data with an EVM? I think that if this is done it would be easy to decode from it the DGPS format. Any pointers or ideas?

Eduardo/EA2BAJ

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

54. [tacgps] Fwd: Oncore RF Connector

From: "Steven R. Bible" <srbible@gate.net>
Date: Thu, 20 May 1999 21:13:30 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: fatcat@zianet.com
Message-ID: <LYR6754-21806-1999.05.20-20.19.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

From: "Thomas Dellacorino" <fatcat@zianet.com>
To: "TAC32" <tac32@lists.tapr.org>
Subject: Oncore RF Connector
Date: Thu, 20 May 1999 19:03:58 -0600

Hi All
Just got an Oncore VP GPS receiver and
am trying to find a mate for the funky
RF connector it uses. Does anyone out
there have a source and part number? It
looks like an SMB only smaller. They
refer to it as an "OSX" connector but I
can't seem to find it listed in any of
my connector catalogs....

~~ Tom ~~

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

55. [tacgps] Re: Fwd: Oncore RF Connector

From: Rick Gilligan <rickg@case.net>
Date: Thu, 20 May 1999 18:42:05 -0700 (PDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-21814-1999.05.20-20.47.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 20 May 1999, Steven R. Bible wrote:

> Just got an Oncore VP GPS receiver and
> am trying to find a mate for the funky
> RF connector it uses. Does anyone out
> there have a source and part number? It
> looks like an SMB only smaller. They
> refer to it as an "OSX" connector but I
> can't seem to find it listed in any of
> my connector catalogs....

TAPR has a connector with a short length of RG174 (argh!, why not RG316?)
on it. $15 I believe.

OCX is the other name I have heard for that connector style and size.

73
Rick
N6NL

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

56. [tacgps] Re: Fwd: Oncore RF Connector

From: "bradley hampton" <bhampton@whidbey.net>
Date: Thu, 20 May 1999 21:09:05 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-21834-1999.05.20-23.14.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The Garmin 12xl uses the same type of conector so any antenna that will work
on the 12xl should work on your receiver.
my motrola vp sends DC currant through this connector to power a preamp in
the antenna.

also garmin sells an adapter that goes from the "OSX" to BNC this may give
you more options it is about 4 in. long.

I hope this helps brad

>refer to it as an "OSX" connector but I
>can't seem to find it listed in any of
>my connector catalogs....

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

57. [tacgps] Re: Fwd: Oncore RF Connector

From: "Henk Uijterwaal (RIPE-NCC)" <henk@ripe.net>
Date: Fri, 21 May 1999 09:15:22 +0200 (CEST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: fatcat@zianet.com
Message-ID: <LYR6754-21870-1999.05.21-02.20.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, 20 May 1999, Steven R. Bible wrote:

> From: "Thomas Dellacorino" <fatcat@zianet.com>
> To: "TAC32" <tac32@lists.tapr.org>

> Subject: Oncore RF Connector
> Date: Thu, 20 May 1999 19:03:58 -0600
>
>
> Hi All

> Just got an Oncore VP GPS receiver and am trying to find a mate for the
> funky RF connector it uses. Does anyone out there have a source and part
> number? It looks like an SMB only smaller. They refer to it as an "OSX"
> connector but I can't seem to find it listed in any of my connector
> catalogs....

The source we got from Motorola-Holland for these connectors is:

   The Phoenix Company of Chicago
   555 Pond Drive
   Wood Dale, IL 60191-1192

   1-800-323-9562

They have the connectors as well as pre-assembled cables.

Henk

Henk Uijterwaal   Email: henk.uijterwaal@ripe.net
RIPE Network Coordination Centre   WWW: http://www.ripe.net/home/henk
Singel 258   Phone: +31.20.535-4414, Fax -4445
1016 AB Amsterdam   Home: +31.20.4195305
The Netherlands   Mobile: +31.6.55861746

The Committee (...) was unable to reach a consensus that substantial merit was
lacking. Thus, the appeal was deemed meritorious.   (Orlando NABC #19).

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

58. [tacgps] Re: Fwd: Oncore RF Connector

From: Robert Boll <rboll@spartan.ac.brocku.ca>
Date: Fri, 21 May 1999 08:50:58 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-21886-1999.05.21-07.56.26--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

Synergy Systems has short adapter cables from OSX to BNC or TNC.

Synergy Systems
(619) 566-0666
http://www.synergy-gps.com/

Robert

At 09:13 PM 5/20/99 -0400, you wrote:
>From: "Thomas Dellacorino" <fatcat@zianet.com>
>To: "TAC32" <tac32@lists.tapr.org>
>Subject: Oncore RF Connector
>Date: Thu, 20 May 1999 19:03:58 -0600
>
>
>Hi All
> Just got an Oncore VP GPS receiver and
>am trying to find a mate for the funky
>RF connector it uses. Does anyone out
>there have a source and part number? It
>looks like an SMB only smaller. They
>refer to it as an "OSX" connector but I
>can't seem to find it listed in any of
>my connector catalogs....
>
>~~ Tom ~~
>
>
>

>---
>You are currently subscribed to tacgps as: rboll@spartan.ac.brocku.ca
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

59. [tacgps] Re: Oncore RF Connector

From: Dave Martindale <davem@cs.ubc.ca>
Date: Fri, 21 May 1999 12:28:49 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-21929-1999.05.21-14.33.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:09 PM 20/05/99 -0700, bradley hampton wrote:
>The Garmin 12xl uses the same type of conector so any antenna that will work
>on the 12xl should work on your receiver.

If the Oncore does use the same connector as the Garmin 12XL and the board-
level Garmin receivers (GPS 20, 25), then it's also called an "MCX". This
may be easier to find than the "OSX" name.

(disclaimer: I have Garmin receivers, not an Oncore).

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

60. [tacgps] Fw: RTCM/Garmin 12XL info?

From: "bradley hampton" <bhampton@whidbey.net>
Date: Sat, 22 May 1999 00:43:51 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-21998-1999.05.22-02.49.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This id the reply I got back from garmin as to why my DGPS may not be working does any one know any thing about the type 9 RTCM message and how they apply to the garmin 12xl?
I tried going to 8 sec on my dgps out put and the garmin would not even go into dgps mode. I went back to the 2 sec and it is doing the same thing 10sec on and 20 sec off with a crappy epe
brad

-----Original Message-----
From: Techsupp <Techsupp@garmin.com>
To: 'bradley hampton' <bhampton@whidbey.net>
Date: Friday, May 21, 1999 3:21 PM
Subject: RE: RTCM/Garmin 12XL info?

Thank you for contacting GARMIN,

You will need to make sure that you output exact RTCM SC-104 message to the GPS unit. You need to send type 1 and type 9 messages. Also, make sure your Baud rates match.

With Best Regards,

Mikel Mayfield
Product Support Specialist

GARMIN International
1200 E. 151st Street
Olathe, KS 66062 USA
http://www.garmin.com/

61. [tacgps] Re: Oncore RF Connector

From: Dan Hinz <dan.hinz@ieee.org>
Date: Sat, 22 May 1999 07:59:57 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22059-1999.05.22-10.05.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I believe the connector is also called an "MCX" connector. It is
available from Digi-Key.
They are manufactured by Johnson Components. The catalog doesn't have a
picture with dimensions on the actual mating part of the connector, the
ad print says 30% smaller than SMB.

This is the connector I had on my Garmin GPS-25. I purchased one of
their antennas and cut the cable in two. One end to the back of a case
mounted BNC inside my TAC-2. Other end got a BNC for roof mounting. I
then used 9913 for majority of run.

73,
Dan
W6LSN

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

62. [tacgps] Re: Fw: RTCM/Garmin 12XL info?

From: Jeff Vollin <barnie@flash.net>
Date: Sat, 22 May 1999 13:10:10 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22090-1999.05.22-15.15.30--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I don't know the specifics of the RTCM message from the TAPR Ref Station,
but I ran a Garmin 12xl off my station at 10 seconds/message and it ran just
fine, with a measured accuracy of 8 meters (95% confidence). Do you run
something like SA Watch? It will report the age of the DGPS corrections.
That might be useful in trouble shooting your problem. I use 4800 baud from the
ref. sta. to my KAM (transparent mode). Reception is via a Pico Packet TNC
with the second serial port dedicated to the rover GPS. The UNPROTO call
is RTCM. I think the Garmins can go 20-30 seconds between updates before
reverting back to normal GPS NAV mode, if things are otherwise working
correctly.

Jeff Vollin

bradley hampton wrote:

>   This id the reply I got back from garmin as to why my DGPS may not be working does
> any one know any thing about the type 9 RTCM message and how they apply to the garmin
> 12xl?I tried going to 8 sec on my dgps out put and the garmin would not even go into
> dgps mode. I went back to the 2 sec and it is doing the same thing 10sec on and 20 sec
> off with a crappy epebrad -----Original Message-----
> From: Techsupp <Techsupp@garmin.com>
> To: 'bradley hampton' <bhampton@whidbey.net>
> Date: Friday, May 21, 1999 3:21 PM
> Subject: RE: RTCM/Garmin 12XL info?Thank you for contacting GARMIN,
>
> You will need to make sure that you output exact RTCM SC-104 message to the GPS unit.
> You need to send type 1 and type 9 messages. Also, make sure your Baud rates match.
>
> With Best Regards,
>
> Mikel Mayfield
> Product Support Specialist
>
> GARMIN International
> 1200 E. 151st Street
> Olathe, KS 66062 USA
> http://www.garmin.com/
>
>

63. [tacgps] Re: Fwd: Oncore RF Connector

From: "Doug McKinney" <buoy@redshift.com>
Date: Sun, 23 May 1999 23:53:53 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22308-1999.05.24-02.03.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Steven R. Bible <srbible@gate.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Cc: fatcat@zianet.com <fatcat@zianet.com>
Date: Thursday, May 20, 1999 6:14 PM
Subject: [tacgps] Fwd: Oncore RF Connector

>From: "Thomas Dellacorino" <fatcat@zianet.com>
>To: "TAC32" <tac32@lists.tapr.org>
>Subject: Oncore RF Connector
>Date: Thu, 20 May 1999 19:03:58 -0600
>
>
>Hi All
> Just got an Oncore VP GPS receiver and
>am trying to find a mate for the funky
>RF connector it uses. Does anyone out
>there have a source and part number? It
>looks like an SMB only smaller. They
>refer to it as an "OSX" connector but I
>can't seem to find it listed in any of
>my connector catalogs....
>
>~~ Tom ~~
>
This connector is called an OSX and the MCX. TAPR sells the connector on a
RG174 cable. You can purchase the MCX from Mouser as a right angle crimp
plug (nickel body) for $4.77. To install the connector requires a very
small tip solering iron, a cap press (to press the cap on to inner wire
access hole) and the RG174 crip tool. Well, to make your own can be costly.
73's
Doug
>
>
>---
>You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

64. [tacgps] Re: Fw: RTCM/Garmin 12XL info?

From: Sam Smith <sam.smith@ece.gatech.edu>
Date: Mon, 24 May 1999 08:15:46 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22322-1999.05.24-07.21.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I ran my setup yesterday for several hours. 8 sec RTCM rate. I captured
a 30 minute log of GPGGA sentences (20 second transmit rate) and was
DGPS OK 92% of the time. This was while running around in the woods
orienteering, etc. Some of the errors were just collisions.

So I don't know what advice to give you Bradley, except that it works
for me. I know I hate it when people tell me that, but keep plugging
away at it.

--
Sam Smith N4MAP
Georgia Tech, ECE 0250, Atlanta, GA USA 30332
http://www.ee.gatech.edu/users/sam
http://www.mindspring.com/~sam.smith

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

65. [tacgps] Re: Fw: RTCM/Garmin 12XL info?

From: "bradley hampton" <bhampton@whidbey.net>
Date: Mon, 24 May 1999 06:31:35 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22345-1999.05.24-08.37.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

it must be something in my tnc configuration I am using the kpc3+ on the
beacon end and the picopacket on the rover end.

if any one has this setup working please send me your setup commands.

I have been running mine in converse mode so mabe I give transparent a try.

thanks brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

66. [tacgps] Re: Fw: RTCM/Garmin 12XL info?

From: "Doug McKinney" <buoy@redshift.com>
Date: Mon, 24 May 1999 07:33:44 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22359-1999.05.24-09.42.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: bradley hampton <bhampton@whidbey.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Monday, May 24, 1999 6:31 AM
Subject: [tacgps] Re: Fw: RTCM/Garmin 12XL info?

>it must be something in my tnc configuration I am using the kpc3+ on the
>beacon end and the picopacket on the rover end.
>
>if any one has this setup working please send me your setup commands.
>
>I have been running mine in converse mode so mabe I give transparent a try.
>
>thanks brad
>
>
I will comment, because I don't have the immediate time to research the
answer. I was one of the first people to transmit Mototrola Proprietary
Binary Formated (MPBF) DGPS signals from one PVT6 to 30 other PVT6s (the
PVT6 is the GPS engine before the VP ONCORE) about 5 years ago. I remember
the difficulty in using Conv, due to Control characters that where being
generated by the MPBF (ie Control C,D etc) which confused the TNC. So I
switched to Transparent and problem went away. But a new problem was that
Transparent was only available in connected only! I had PacComm change the
EPROM so unconnected Transparent would be inabled and that worked. The RTCM
is also binary but avoides the Control Cs and Ds etc. This info was
provided to help you understand the problems a TNC may incounter. When I
get some time, I will research this in more detail.
73's
Doug

>
>---
>You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

67. [tacgps] Re: Fw: RTCM/Garmin 12XL info?

From: Gary Thurmond <thga@mbari.org>
Date: Mon, 24 May 1999 09:54:28 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22391-1999.05.24-12.00.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brad,

I have been running a differential corrections packet site (466.7625 MHz) from
Mt. Toro (Monterey CA.) for our oceanographic research activities on Monterey
Bay.
One of the first problems encountered was that hex value 7C is the default
STReamswitch character for the PacComm TNC. Every time the gps differential
reference receiver would output 7C hex, the TNC would do a stream switch.
My fix for the problem was to set STReamswitch character to $00. I don't have
any experience with the KPC3+, so don't know if this applies to your beacon
tnc.
RTCM 104 data only uses ascii values 40 hex to 7F hex. There are no control
characters in the data so running in converse mode should be no problem.
The rover tnc should have the ADRdisp OFF. Some gps receivers get confused with

any data outside RTCM 104 message. This has been a fix for some Garmin users
here at the lab.
Hope this is of some help.

Gary, w6str@mbari.org

bradley hampton wrote:

> it must be something in my tnc configuration I am using the kpc3+ on the
> beacon end and the picopacket on the rover end.
>
> if any one has this setup working please send me your setup commands.
>
> I have been running mine in converse mode so mabe I give transparent a try.
>
> thanks brad
>
> ---

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

68. [tacgps] Re: Fw: RTCM/Garmin 12XL info? thanks...

From: "bradley hampton" <bhampton@whidbey.net>
Date: Mon, 24 May 1999 10:51:24 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22401-1999.05.24-12.56.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the info doug I will go back through all the setup commands to
see if any thing reverted when I powered down. the kpc3 stayed in con mode
like it should but mabe some other stuff changed back.

the performance I have been hearing about would be very useful when I get to
guam since there is no coast guard beacon. I have till the end of July to
get this up and running.
I have been working for several months now but since I don't have any packet
or tnc back ground I am starting from scratch.
I got the tnc's just for this task.
brad

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

69. [tacgps] Re: Oncore RF Connector

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Mon, 24 May 1999 17:54:21 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22403-1999.05.24-13.02.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug McKinney wrote:

> This connector is called an OSX and the MCX. TAPR sells the connector on a
> RG174 cable. You can purchase the MCX from Mouser as a right angle crimp
> plug (nickel body) for $4.77. To install the connector requires a very
> small tip solering iron, a cap press (to press the cap on to inner wire
> access hole) and the RG174 crip tool. Well, to make your own can be costly.

Another easy, ready source is DigiKey (http://www.digikey.com or
1-800-DIGIKEY). If you do not have the expen$ive crimping tool, I
strongly recommend that you use the right-angle variety. In their
catalog you will find 4 such connectors:

J531 = RG174 Gold = $5.42
J532 = RG174 Nickel = $5.24
J535 = RG316 Gold = $5.53
J536 = RG316 Nickel = $5.24

RG174 is probably the coax size you want -- RG316 is very small.

You can use either the gold or nickel versions; IMHO the Gold connectors

are worth the extra pennies.

Despite Doug's comment, you do NOT need a cap press. The small
(~3/16" diameter) cover is slightly bowed. You drop it into the
connector dome up, and then use a center punch to flatten it out.

The crimp tools are expensive, costing upwards of $300. Since you
only have to crimp the shield on the right-angle versions, I have
been very successful doing the crimp with many other tools,
including pliers!

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

70. [tacgps] Re: Fw: RTCM/Garmin 12XL info? thanks...

From: "Doug McKinney" <buoy@redshift.com>
Date: Mon, 24 May 1999 11:03:07 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22405-1999.05.24-13.12.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: bradley hampton <bhampton@whidbey.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Monday, May 24, 1999 10:51 AM
Subject: [tacgps] Re: Fw: RTCM/Garmin 12XL info? thanks...

Well Brad, since you are going to Guam and also have limited back ground
with the TNC, I will make an effort to help you along. If you would, list
the equipment you are using (I see the KPC3 or is it a KPC3+) and I seem to
remember a picopacket (which version). I have the KPC3+ (still in the box)
and 2 versions of the picopacket. I have set these systems up before using
other TNCs.
You can directly email me at kc3rl@tapr.org . We will get it running and
then we'll put the results out on tacgps!
73's
Doug

>Thanks for the info doug I will go back through all the setup commands to
>see if any thing reverted when I powered down. the kpc3 stayed in con mode
>like it should but mabe some other stuff changed back.
>
>the performance I have been hearing about would be very useful when I get
to
>guam since there is no coast guard beacon. I have till the end of July to
>get this up and running.
>I have been working for several months now but since I don't have any
packet
>or tnc back ground I am starting from scratch.
>I got the tnc's just for this task.
>brad
>
>
>
>---
>You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

71. [tacgps] Re: Oncore RF Connector

From: "Doug McKinney" <buoy@redshift.com>
Date: Mon, 24 May 1999 11:17:15 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22407-1999.05.24-13.26.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Dr Thomas A Clark (W3IWI) <tac@clark.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Monday, May 24, 1999 10:57 AM

Subject: [tacgps] Re: Oncore RF Connector

>Doug McKinney wrote:
>
>> This connector is called an OSX and the MCX. TAPR sells the connector on
a
>> RG174 cable. You can purchase the MCX from Mouser as a right angle crimp
>> plug (nickel body) for $4.77. To install the connector requires a very
>> small tip solering iron, a cap press (to press the cap on to inner wire
>> access hole) and the RG174 crip tool. Well, to make your own can be
costly.
>
>Another easy, ready source is DigiKey (http://www.digikey.com or
>1-800-DIGIKEY). If you do not have the expen$ive crimping tool, I
>strongly recommend that you use the right-angle variety. In their
>catalog you will find 4 such connectors:
>
>J531 = RG174 Gold = $5.42
>J532 = RG174 Nickel = $5.24
>J535 = RG316 Gold = $5.53
>J536 = RG316 Nickel = $5.24
>
>RG174 is probably the coax size you want -- RG316 is very small.
>
>You can use either the gold or nickel versions; IMHO the Gold connectors
>are worth the extra pennies.
>
>Despite Doug's comment, you do NOT need a cap press. The small
>(~3/16" diameter) cover is slightly bowed. You drop it into the
>connector dome up, and then use a center punch to flatten it out.
>

Hey Tom, good to see your email!!! My cap press was an Arbor press that
cost about $29 at Habor Freight. I drilled a hole in the base plate and
PRESTO, it's now a snap to get the caps on. The MCX connectors I have used
are right angle and have had flat caps (Radiall R 113 182). My crimp tool
cost about $45 from a local dealer and you should also find them in Jamco,
DigiKey, Mouser etc. for about the same price. Hope this helps!

73's
Doug

>The crimp tools are expensive, costing upwards of $300. Since you
>only have to crimp the shield on the right-angle versions, I have
>been very successful doing the crimp with many other tools,
>including pliers!
>
>73, Tom
>
>---
>You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

72. [tacgps] Re: Oncore RF Connector

From: "Thomas Dellacorino" <fatcat@zianet.com>
Date: Mon, 24 May 1999 17:59:04 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-22467-1999.05.24-19.03.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
 I just wanted to say thank you to
everyone who responded to my question
about the RF connector. Now that I know
it is an MCX type and have a couple of
them on order at a reasonable price, it
is no problem. I also have a plethora of
various crimping tools and dies, as well
as a pseudo cap press available at work.
So, crimping the connector should not be
a problem. I had even contemplated
trying to install an PC mount SMA which

I have in stock, on the Oncore, or even soldering RG-188 directly to the bottom of the board, before I was going to pay $15.00 or more from Motorola or anyone else, for their goofy connector. But, for $5.00 for a gold plated MCX from Mouser, it wasn't worth screwing around trying to retrofit the receiver. So thanks again everyone, looks like you guys got me on a roll.

~~ Tom ~~

-----Original Message-----
From: bounce-tacgps-8801@lists.tapr.org [mailto:bounce-tacgps-8801@lists.tapr.org]On Behalf Of Dr Thomas A Clark (W3IWI)
Sent: Monday, May 24, 1999 11:54 AM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Oncore RF Connector

Doug McKinney wrote:

> This connector is called an OSX and the MCX. TAPR sells the connector on a
> RG174 cable. You can purchase the MCX from Mouser as a right angle crimp
> plug (nickel body) for $4.77. To install the connector requires a very
> small tip solering iron, a cap press (to press the cap on to inner wire
> access hole) and the RG174 crip tool.

Well, to make your own can be costly.

Another easy, ready source is DigiKey http://www.digikey.com or 1-800-DIGIKEY). If you do not have the expen$ive crimping tool, I strongly recommend that you use the right-angle variety. In their catalog you will find 4 such connectors:

J531 = RG174 Gold = $5.42
J532 = RG174 Nickel = $5.24
J535 = RG316 Gold = $5.53
J536 = RG316 Nickel = $5.24

RG174 is probably the coax size you want -- RG316 is very small.

You can use either the gold or nickel versions; IMHO the Gold connectors are worth the extra pennies.

Despite Doug's comment, you do NOT need a cap press. The small (~3/16" diameter) cover is slightly bowed. You drop it into the connector dome up, and then use a center punch to flatten it out.

The crimp tools are expensive, costing upwards of $300. Since you only have to crimp the shield on the right-angle versions, I have been very successful doing the crimp with many other tools, including pliers!

73, Tom

You are currently subscribed to tacgps as: fatcat@zianet.com
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

73. [tacgps] APRS & Weather?

From: Ted Sarah <w8tts@gwis.com>
Date: Sat, 29 May 1999 15:51:06 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-23320-1999.05.29-10.57.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to put an APRS weather station on the air. Currently I
have a Davis Weather Wizard III and a few questions:

1. Has anyone set up an APRS weather station using the Wizard III? If
so how?

2. Can a weather station be set up using just a weather monitor, TNC,
and transceiver?

3. Would it be better to upgrade to the Wizard II, or to another
manufactures weather
     station?

4. Since I don't want to tie up my regular 2 meter rig, nor do I need
the power that it
    puts out, any suggestions on a rig?

73 - Ted - W8TTS

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

74. [tacgps] RE: APRS & Weather?

From: "Ron L. Sparks" <spark51@ibm.net>
Date: Sat, 29 May 1999 12:28:49 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-23343-1999.05.29-12.34.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

One approach might be the Hamtronics equipment with a 2 meter brick to get
the output power you need. Their single frequency crystal controlled 2 W, 2
m FM exciter kit is $99 and the companion receiver kit is $129. They are
$169 and $189 wired and tested so an inexpensive HT might be better if you
are not "solder compliant". I have never used their stuff, but people who
have seem to give it good ratings. Their address is
http://www.hamtronics.com and phone is 716-392-9430.
73
Ron
KC5ODM

-----Original Message-----
From: bounce-tacgps-5718@lists.tapr.org
[snip]
4. Since I don't want to tie up my regular 2 meter rig, nor do I need
the power that it puts out, any suggestions on a rig?

73 - Ted - W8TTS

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

75. [tacgps] Re: APRS & Weather?

From: Robert Winingham <kc5ejk@onramp.net>
Date: Sat, 29 May 1999 15:18:51 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-23360-1999.05.29-15.24.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Good news: the TAPR APRS-SIG is archived at www.tapr.org and searchable.

Lots of info about Davis Weather systems but you will need
a computer between the Davis and the TNC.

The Peet system seems to be the one most used as a Remote (Computer less) station

See:

http://www.dididahdahdidit.com/

http://www.theworks.com/~wa6ylb/kpcdigi.txt

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

76. [tacgps] 1999 TAPR Digital Forum @ HamVention

From: Greg Jones <wd5ivd@tapr.org>
Date: Mon, 31 May 1999 13:14:11 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-23580-1999.05.31-13.20.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The audio from the TAPR Digital Forum held during the 1999 Dayton
Hamvention is now available for listening. If you couldn't make the forum
this year, you can catch up on all the talks.

http://www.tapr.org/tapr/html/Fdayton99.html

Welcome to the TAPR Digital Forum
              John Ackermann, AG9V, Forum Moderator

TAPR Kit/Project/Organizational Update
              Greg Jones, WD5IVD (www)

Linux AX.25
              John Ackermann, N8UR

PIC-E Developments
              Steve Bible, N7HPR (www) and John Hanson, W2FS

GPS Projects
              Steve Bible, N7HPR (www)

Compact Flash Adapter
              John Koster, W9DDD

APRS Update
              Steve Dimse, K4HG and Stan Horzepa, WA1LOU

TAPR 900Mhz FHSS Radio Project
              Tom McDermott, N5EG

in addition Dave Pedersen, N7BHC, talk on "A Little Technology Goes a Long
Way" during the TAPR PacketBASH on Friday is available.

Cheers - Greg Jones, WD5IVD

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
---
e-mail: tapr@tapr.org   web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000   fax: 940-565-2544

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

June 1999

Original source file: tacgps.9906
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9906

1. [tacgps] ALERT-Widespread GPS Tests

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Tue, 1 Jun 1999 21:41:20 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: sdaponte@bellsouth.net, divesurf@gate.net
Message-ID: <LYR6754-23804-1999.06.01-20.50.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Please note the following has been edited to include only information
pertaining to GPS receivers. I have experienced first hand the
problems that the last test phase brought about at some very "rude"
hours of the morning! During the last tests both my GPS-45 and GPS
III did work but were very sluggish to start up. I did not experience
any problems with receiving a position but I had tons of problems
with timing and getting a lock on the Oncore boards near some TV
transmitters. Note the problems were very limited due to my situation
of co-location with 80kw (+ antenna gain) of CH 67 video who's 2nd
harmonic is right in the middle of the GPS band. I did speak to
others in different parts of the country that had the same problem so
this was not one of a kind but still limited. This is just a heads
up, again most if not all the noted problems were with the use of the
GPS as a timing reference, not a position reference but who knows
this time around.
 XXX

KNOWN FACTS ABOUT THE EVENT

A USAF Space Command GPS system test for Y2K and EOW rollover was in effect
at the time of the incidents using satellite SVN 27. This satellite
was marked "unhealthy" to prevent GPS receivers (such as the RFTG)
from being affected by the testing. SVN 27 was visible across North
America during the time of the incidents. The final part of this
phase of testing occurred on 5/1/99.

FACTS ABOUT RFTG GPS RECEIVER OPERATION

If a RFTG GPS receiver is locked to 3 or more satellites and one of them
outputs a different time (as SVN 27 was during testing), it will not be
vulnerable because the receiver will arbitrate the bad satellite out of its
calculations.

The receivers are made to recognize satellites marked "unhealthy" (as SVN
27 was marked) and ignore them, even if it is the only satellite they
can see.

OUR ANALYSIS TO DATE - UPDATED 5/27/99

At present, we believe the receivers that failed were locked on to SVN 27,
did not detect it to be unhealthy, and did not have the required 3 or
more satellite complement to arbitrate. We are investigating with the
receiver manufacturer why the receiver did not respond as specified
above.

The receivers did not fail because of Y2K or EOW Rollover testing, but
rather because they could not resolve the conflicting time/date
information presented to them.

MOTOROLA GPS RECEIVER DISCLOSURE - UPDATED 5/27/99

Motorola has acknowledged that their VP Oncore GPS receiver (used by the
RFTGand RFTGm products), if locked to only one satellite, could fail
to detect that satellite to be marked as "unhealthy". Also, if the
receiver is recovering from flywheeling and the "unhealthy" satellite
is the first satellite acquired, it could fail to detect it to be
unhealthy.

NEW INFORMATION - 5/27/99

The USAF Space Command has acknowledged that the second (and final) phase
of testing is tentatively scheduled to occur 6/21/99 through 7/1/99
using satellite PRN 13. This test phase will mirror the first phase
(4/23 to 5/1), therefore, similar disruptions may occur. PRN 13 will
be visible during this period over most of the continental US, from

about 15:00 - 20:00 GMT. Specific scheduled outages of PRN 13 will be
posted on the USCG web
http://www.navcen.uscg.mil/gps/status/default.htm

Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] Unknown board

From: Helmut Bayerlein <na1035@fen.baynet.de>
Date: Wed, 02 Jun 1999 11:49:04 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-23990-1999.06.03-04.19.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello group!

I got a pcb 7.5cm by 4.3cm which seems to be a GPS receiver. But I
dont'n know exactly. It contains a MSX connector, a crystal oscillator
16.03495MHz, a battery, a rtc, a ceramic filter 1577MHz, a processor
KCD-57A, another chip KCA-36-517 and a 27C102 PROM. A small connector
with 5 pins is also on the board. Printed on it is "G37-700B", on the
processor it is labelled "GSU-14F Type G37A4" and on the PROM "KM-A94".

Does anybody know if it is a GPS receiver and if it is true, which type
and manufacturer? Also the pins of the connector are of interest.

Any help will be appreciated.

Thanks,

Helmut, DC3YC

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] RE: Unknown board

From: Mastenbrook Gary-G13216 <g13216@email1.wes.mot.com>
Date: Thu, 3 Jun 1999 07:31:23 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-24001-1999.06.03-07.37.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Helmut- I'm not sure what you have there, but I can say what it's not...
>From your description, it's NOT a Motorola OnCore GPS receiver. Good luck
in your quest!
73's
Gary N8DMT

Gary Mastenbrook, Technology Manager, Motorola Telematics
50 E. Commerce Drive, Schaumburg, IL 60173
Email: g13216@email.mot.com
Work Home Page: http://www.mot.com
Personal Home Page: http://www.qsl.net/n8dmt

-----Original Message-----
From: Helmut Bayerlein [mailto:na1035@fen.baynet.de]
Sent: Wednesday, June 02, 1999 4:49 AM
To: TAPR Special Interest Group
Subject: [tacgps] Unknown board

Hello group!

I got a pcb 7.5cm by 4.3cm which seems to be a GPS receiver. But I
dont'n know exactly. It contains a MSX connector, a crystal oscillator
16.03495MHz, a battery, a rtc, a ceramic filter 1577MHz, a processor
KCD-57A, another chip KCA-36-517 and a 27C102 PROM. A small connector
with 5 pins is also on the board. Printed on it is "G37-700B", on the
processor it is labelled "GSU-14F Type G37A4" and on the PROM "KM-A94".

Does anybody know if it is a GPS receiver and if it is true, which type
and manufacturer? Also the pins of the connector are of interest.

Any help will be appreciated.

Thanks,

Helmut, DC3YC

You are currently subscribed to tacgps as: G13216@EMAIL1.WES.MOT.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Test-Pse Delete

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Sun, 6 Jun 1999 18:49:08 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-24670-1999.06.06-17.57.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

No messages rec. for days. Testing.
Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: tacgps digest: June 06, 1999

From: mpetz@ccm.stlcc.cc.mo.us (Michael Petz)
Date: Mon, 7 Jun 1999 08:45:53 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-24794-1999.06.07-08.55.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello All:
       I finally got my DGPS mounted in the case and sending corrections to
my Garmin 12XL.   I need to connect a TNC to my DGPS so I can transmit the
corrections. I have an old PK232 (pre mailbox) or a new KPC3+ (ver. 8.3).
I would prefer to use the old PK232 for the DGPS transmission so I can use
the KPC3+ on the receive side. What settings should I use on either of
these TNCs to get the corrections out on the air. What is everyone else
doing and how are you doing it. Are there a standard settings?

Tnx in advance

KA9HNT
Michael Petz
Coordinator of Engineering
(314)-539-5073
mpetz@ccm.stlcc.cc.mo.us

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] kpc3+ ver 8.3 setup? all commands list.

From: "bradley hampton" <bhampton@whidbey.net>
Date: Mon, 7 Jun 1999 09:34:34 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

Hello, I am going to this effort because time is short I am on 30 days
vacation till the end of June then I will be shipping my possessions to guam
including my dgps I have been getting help from many people in little bits
and pieces at a time but I have not been able to put it all together with
all the commands available in the kpc3+ there are to many combinations for
me to try them all.
my link has become stronger since I switched to the transparent mode.
the kpc3+ is used on the beacon end of the link.
I will worry about the picopacket on the rover later, soon but later.
thanks brad

```
****NOTE ALL COMMANDS ARE DEFAULT UNLESS NOTED****
8BITCONV    ON
ABAUD        4800
AUTOLF        ON
AX2512V2    ON
AXDELAY    0
AXHANG      0
BEACON    E    10        (NEW)
BKONDEL    ON
BLT
1    EVERY    00:00:00
2    EVERY    00:00:00
3    EVERY    00:00:00
4    EVERY    00:00:00
BREAK    OFF
BTEXT    DGPS CORRECTIONS BY BRAD HAMPTON KC7MRP BHAMPTON@WHIDBEY.NET
(NEW)
BUDLIST    OFF    DGPS    (NEW)
CANLINE     $18 CTRL-X
CANPAC    $19  CTRL-Y
CD    INTERNAL
CHECK                0        (DISABLED)
CMDTIME            1         (1SEC)
CMSG                   OFF
COMMAND           $03  CTRL-C
CONLIST                OFF     NONE
CONMODE            CONVERS     [NEW]                            TRANSPARENT?
CONOK                ON
CONPERM            OFF
CPACTIME            OFF                    [NEW]
CR                           ON
CRSUP                     OFF
CSTAMP                 OFF
CTEXT
CTRL                         A  OFF    B  OFF
CWID                         EVERY 0  (DISABLED)
CWIDTEXT            DE KC7MRP
DAYTIME                 01/24/1998 08:28:09
DAYWEEK            8
DAYSTR                  mm/dd/yyyy hh:mm:ss
DAMA                     OFF
DAMACHCK        18  (180 SEC)
DBLDISC                 OFF
DELETE                 $00
DIGIPEAT                 ON
DWAIT                     0
ECHO                     OFF                [NEW]
ESCAPE                 OFF
FLOW                     OFF
FILTER                     OFF
FRACK                     4        (4 SEC)
FULLDUP                 OFF
GPSHEAD
1 $GPGGA
2
3
4
GPSINIT
GPSPORT             0 NORMAL CHECKSUM
GPSTIME                VALID RMC
HBAUD                    1200
HEADERLN            OFF
HID                             ON
HTEXT
INTFACE                    TERMINAL
```

```
KNTIMER               15MIN
LEDS                       ON
LCOK                       ON
LFADD                       OFF
LFSUP                       OFF
LGETCHAR            $05   CTRL-E
LLIST                       OFF  NONE
LT
1
2
3
4
LTP
1   GPS
2   GPS
3   GPS
4   GPS
LTRACK                    0
MONITOR                  ON                [NEW]
MALL                          ON
MAXFRAME               4
MAXUSERS               10
MBEACON                   ON
MCON                          ON
MCOM                          OFF
MHEADER                   ON
MRESP                         OFF
MRPT                            ON
MSTAMP                       OFF
MXMIT                           OFF                    [NEW]
MYCALL                       KC7MRP            [NEW]
MYALIAS                       DISABLED
MYDGPS                       DISABLED
MYDROP                       0
MYNODE                       KC7MRP-7       [NEW]
MYPBBS                       KC7MRP-1        [NEW]
MYREMOTE                    DISABLED
NDWILD                          OFF
NEWNODE                      OFF                [NEW]
NOMODE                          OFF                [NEW]
NTEXT
NUMNODES                     0
PACLEN                             0                     [NEW]
PACTIME                         AFTER 10  (1000 MSEC)
PASS                                 $00                     [NEW]
PASSALL                         OFF
PBBS                                100
PBFORWARD                    NONE EVERY  0 (DISABLED)
PBHEADER                       ON
PBHOLD                            ON
PBKILLFW                         OFF
PBLIST                            OFF NONE
PBLO                             NEW VARIABLE
PBPERSON                      OFF
PBREVERS                      ON
PERSIST                          63  (25%)
PID                          OFF
PMODE                 CONVERSE [NEW]                     TRANSPARENT?
PTEXT
REDISPLA            $12   CTRL-R
RELINK                OFF
RETRY                 10
RING                     ON
RNRTIME             0   (DISABLED)
RTEXT
SCREENL          0
SENDPAC        $0D   CTRL-M
SLOTTIME        10 (100 MSEC)
START            $11     CTRL-Q
STOP                $13    CTRL-S
STREAMSW    $00
STREAMCA    OFF
STREAMEV    ON
SUPLIST        OFF  NONE
SWP                17,17,108
TELEMTRY    0 (DISABLED)
TRACE             OFF
TRFLOW        OFF
TRIES             10
```

```
TXDELAY        30    (300 MSEC)
TXFLOW        OFF
UNPROTO     DGPS    [NEW]
UIDIGI            OFF    NONE
UIWAIT            OFF
UIFLOOD        DISABLED,30,NOID
UITRACE          DISABLED,30
USERS            1
XFLOW            ON
XKCHKSUM    OFF
XKPOLLED      OFF
XMITLVL            7    [NEW]
XMITOK              $13    CTRL-S
XON                    $11    CTRL-Q



---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

7. [tacgps] Garmin GPS Model 25

From: "Mark Guest" <KE4TNO@aol.com>
Date: Tue, 8 Jun 1999 17:34:28
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-25102-1999.06.08-17.40.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
I need some help on how to determine the correct way to read the connector
pins. If I hold the GPS engine with the connector pins at the top and
facing away from me, do the numbers run from left to right, ie., 1,2,3,4
etc?

Thanks,

Mark

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

8. [tacgps] Re: Garmin GPS Model 25

From: "Doug McKinney" <buoy@redshift.com>
Date: Tue, 8 Jun 1999 16:23:54 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-25109-1999.06.08-18.34.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
-----Original Message-----
From: Mark Guest <KE4TNO@aol.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Tuesday, June 08, 1999 3:34 PM
Subject: [tacgps] Garmin GPS Model 25


>I need some help on how to determine the correct way to read the connector
>pins. If I hold the GPS engine with the connector pins at the top and
>facing away from me, do the numbers run from left to right, ie., 1,2,3,4
>etc?
>
>Thanks,
>
>Mark
>
Mark, your statment was not correct.
Plug the cable into the Garmin.  With the cable FACING YOU and the white
connector is on TOP of Garmin PCB, the #1 pin is to the left (G1). Left to
right is 1, 2, 3 .......12
73's
Doug
KC3RL

>---
>You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
```

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Looking for a Garmin GPS-30

From: Rosenberg.Eric@orbcomm.com
Date: Mon, 14 Jun 1999 11:38:24 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-25937-1999.06.14-17.33.15--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm looking for a GPS-30...the self-contained GPS units that TAPR offered last
year (or was it the year before?)

If you have one you don't need or want, please let me know!

Thanks in advance.

Eric (W3DQ)
--
rosenberg.eric@orbcomm.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Widespread GPS Tests Today

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Mon, 21 Jun 1999 16:23:20 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-26877-1999.06.21-15.32.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The sat in question is calculated to be in view at about 17:45 EST
today in SE Florida.

Please note the following has been edited to include only information
pertaining to GPS receivers. I have experienced first hand the
problems that the last test phase brought about at some very "rude"
hours of the morning! During the last tests both my GPS-45 and GPS
III did work but were very sluggish to start up. I did not experience
any problems with receiving a position but I had tons of problems
with timing and getting a lock on the Oncore boards near some TV
transmitters. Note the problems were very limited due to my situation
of co-location with 80kw (+ antenna gain) of CH 67 video who's 2nd
harmonic is right in the middle of the GPS band. I did speak to
others in different parts of the country that had the same problem so
this was not one of a kind but still limited. This is just a heads
up, again most if not all the noted problems were with the use of the
GPS as a timing reference, not a position reference but who knows
this time around.
 XXX

KNOWN FACTS ABOUT THE EVENT

A USAF Space Command GPS system test for Y2K and EOW rollover was in effect
at the time of the incidents using satellite SVN 27. This satellite
was marked "unhealthy" to prevent GPS receivers (such as the RFTG)
from being affected by the testing. SVN 27 was visible across North
America during the time of the incidents. The final part of this
phase of testing occurred on 5/1/99.

FACTS ABOUT RFTG GPS RECEIVER OPERATION

If a RFTG GPS receiver is locked to 3 or more satellites and one of them
outputs a different time (as SVN 27 was during testing), it will not be
vulnerable because the receiver will arbitrate the bad satellite out of its
calculations.

The receivers are made to recognize satellites marked "unhealthy" (as SVN
27 was marked) and ignore them, even if it is the only satellite they
can see.

OUR ANALYSIS TO DATE - UPDATED 5/27/99

At present, we believe the receivers that failed were locked on to SVN 27,
did not detect it to be unhealthy, and did not have the required 3 or

more satellite complement to arbitrate. We are investigating with the
receiver manufacturer why the receiver did not respond as specified
above.

The receivers did not fail because of Y2K or EOW Rollover testing, but
rather because they could not resolve the conflicting time/date
information presented to them.

MOTOROLA GPS RECEIVER DISCLOSURE - UPDATED 5/27/99

Motorola has acknowledged that their VP Oncore GPS receiver (used by the
RFTGand RFTGm products), if locked to only one satellite, could fail
to detect that satellite to be marked as "unhealthy". Also, if the
receiver is recovering from flywheeling and the "unhealthy" satellite
is the first satellite acquired, it could fail to detect it to be
unhealthy.

NEW INFORMATION - 5/27/99

The USAF Space Command has acknowledged that the second (and final) phase
of testing is tentatively scheduled to occur 6/21/99 through 7/1/99
using satellite PRN 13. This test phase will mirror the first phase
(4/23 to 5/1), therefore, similar disruptions may occur. PRN 13 will
be visible during this period over most of the continental US, from
about 15:00 - 20:00 GMT. Specific scheduled outages of PRN 13 will be
posted on the USCG web
http://www.navcen.uscg.mil/gps/status/default.htm

Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to aprssig as: K4GPS@BELLSOUTH.NET
To unsubscribe send a blank email to leave-aprssig-2332F@lists.tapr.org

Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] GPS Testing - update on test dates

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Wed, 23 Jun 1999 16:22:43 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: divesurf@gate.net
Message-ID: <LYR6754-27213-1999.06.23-15.31.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

------- Forwarded Message Follows -------
 The email below is the latest information regarding the next wave of
GPS testing by the Air Force. It has been delayed until July. It
was originally scheduled for this week.

 FYI - Here's the latest info from US Space Command on when the
second phase of GPS testing is scheduled to occur:

 * Test #1 July 2nd   = testing for 28/29 February 2000
 * Test #2 July 6th   = testing for 29 February / 01 March 2000
 * Test #3 July 10th = testing for 21/22 August End of Week
                                    Rollover
> * Test #4 July 13th = testing for 31 December / 01 January 2000, Y2K

**** Each day's test will commence at approx. 0500 zulu and end at
approx.
2000 zulu. ****

Again these are "tentative" test dates, based on a successful "Dry
Run" this Thursday. They could change again, (hopefully not).

Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Re: Looking for a Garmin GPS-30

From: "Michael P. Murphy" <mpmurph@cooper-energy-services.com>
Date: Thu, 24 Jun 1999 10:15:17 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-27319-1999.06.24-09.28.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Eric...

 I have two of the GPS-30 units, one that has been run for a few hours
only, and the other has never been tried. I was on vacation last week
and did not receive your message until recently. I am willing to part
with one or both of those units, let me know if you still need them.

Mike Murphy
KA8ABR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

July 1999

Original source file: tacgps.9907
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9907

1. [tacgps] 1999 ARRL and TAPR Digital Communications Conference

From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 1 Jul 1999 14:00:26 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-28276-1999.07.01-14.09.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

1999 ARRL and TAPR Digital Communications Conference
September 24-26, 1999
Phoenix, Arizona

Web: http://www.tapr.org/dcc

It's that time again! Time to start making your travel plans and
thinking about what to publish for the upcoming 18th Annual ARRL
and TAPR Digital Communications Conference.

The 1999 ARRL and TAPR Digital Communications Conference will
be held September 24-26, 1999 in Phoenix, Arizona. This year's
conference location is just minutes away from the Phoenix Sky Harbor
International Airport (PHX).

For full details on the conference, refer to the web page listed above.

Contact TAPR to register for the DCC:

Tucson Amateur Packet Radio
8987-309 E. Tanque Verde Road #337
Tucson, AZ 85749-9399.
phone 940-383-0000, fax 940-566-2544
e-mail tapr@tapr.org, browse http://www.tapr.org

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] Rubidium Frequency Standard Trade

From: "Chuck Beuning" <cbeuning@kscable.com>
Date: Tue, 6 Jul 1999 21:35:04 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-28980-1999.07.06-21.42.50--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have followed this list for several years now and have enjoyed all the
discussions.

I plan to build several of Brook Shera's excellent GPS frequency standard
controllers. I will need several Motorola VP or UT+ recievers along with
antennas. As with all of my projects I try to keep the cash outlay to a
minimun (ok, I'm cheap). I do have several surplus (tested and
calibrated in my lab) Rubidium Frequency Standards (Efratom FRK) that I
would be interested in trading. These are currently selling at $300-500 on
the surplus market. If anyone has a Motorola GPS reciever system I would
like
to talk to them about trading a Rubidium for it. I am also looking for top
quality crystal oscillators (SC style crystals).

Thank you for your time.

Chuck Beuning
316-721-8258
Wichita, KS

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] Re: Rubidium Frequency Standard Trade

From: mdmiller@eaze.net
Date: Tue, 06 Jul 1999 22:31:41 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-28990-1999.07.06-22.41.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Chuck,

I will trade you an Oncore VP for a RUBE. Where do I send the reciever?

Mark Miller
5612 Trail Crest Dr.
Arlington TX 76017

At 09:35 PM 7/6/99 -0500, you wrote:
>I have followed this list for several years now and have enjoyed all the
>discussions.
>
>I plan to build several of Brook Shera's excellent GPS frequency standard
>controllers. I will need several Motorola VP or UT+ recievers along with
>antennas. As with all of my projects I try to keep the cash outlay to a
>minimun (ok, I'm cheap). I do have several surplus (tested and
>calibrated in my lab) Rubidium Frequency Standards (Efratom FRK) that I
>would be interested in trading. These are currently selling at $300-500 on
>the surplus market. If anyone has a Motorola GPS reciever system I would
>like
>to talk to them about trading a Rubidium for it. I am also looking for top
>quality crystal oscillators (SC style crystals).
>
>Thank you for your time.
>
>Chuck Beuning
>316-721-8258
>Wichita, KS
>
>
>---
>You are currently subscribed to tacgps as: MDMILLER@EAZE.NET
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] TAC-32 question/request

From: John Ackermann <jra@febo.com>
Date: Thu, 08 Jul 1999 08:48:34 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29154-1999.07.08-07.56.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm still struggling to find a good location for the GPS antenna at my
house. The difficulty is that I have a solid line of very tall trees
running east-west just south of the house, so my view of the southern
sky is not good.

My first attempt to quantify my horizon visibility was to use SAWatch
to generate a satellite horizon plot. The problem with this is that as
long as you're plotting the lowest elevation at which a bird is seen,
the trees create an unduly optimistic result -- you'll often acquire a
satellite at a low elevation, only to lose it for a long, long time as
it passes through the leafy part of the trees.

Anyway, I think it might be really useful to be able to generate an
average DOP value over time that could be used to quantify the quality
of an antenna system/location. Can TAC-32 do that? If not, would this
be a worthwhile addition? I'm not sure which of the many DOPs would be
the best one for this purpose; I'll leave that to the real experts.

John N8UR
jra@febo.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: TAC-32 question/request

From: "Doug McKinney" <buoy@redshift.com>
Date: Thu, 8 Jul 1999 11:50:59 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29185-1999.07.08-14.06.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: John Ackermann <jra@febo.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, July 08, 1999 5:48 AM
Subject: [tacgps] TAC-32 question/request

> I'm still struggling to find a good location for the GPS antenna at my
> house. The difficulty is that I have a solid line of very tall trees
> running east-west just south of the house, so my view of the southern
> sky is not good.
>
> My first attempt to quantify my horizon visibility was to use SAWatch
> to generate a satellite horizon plot. The problem with this is that as
> long as you're plotting the lowest elevation at which a bird is seen,
> the trees create an unduly optimistic result -- you'll often acquire a
> satellite at a low elevation, only to lose it for a long, long time as
> it passes through the leafy part of the trees.
>
> Anyway, I think it might be really useful to be able to generate an
> average DOP value over time that could be used to quantify the quality
> of an antenna system/location. Can TAC-32 do that? If not, would this
> be a worthwhile addition? I'm not sure which of the many DOPs would be
> the best one for this purpose; I'll leave that to the real experts.
>
> John N8UR
> jra@febo.com
>
>
Well, you do need the geometry (full sky in all directions) for best DOP.
Your front yard is the best that I can remember, for the best sky. John,
what is it that you want at your place, position or timing? Position is out
in the street and measure back to your house. Timing, you only need a few
satillites (boy, I forgot how many makes a few, HI, HI). I don't think I
was much help, but I did want to say HI, anyway!
73's
Doug
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: TAC-32 question/request

From: John Ackermann <jra@febo.com>
Date: Thu, 08 Jul 1999 16:32:47 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29190-1999.07.08-15.40.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Doug --

Well, I'm pretty sure I can get enough satellites for a good timing
fix. My question was more general -- I'm just interesting in a way to
characterize a "good" versus a "bad" gps site. It seemed that an
average DOP would be a way to do that. I"m not entirely sure what I'd
do with the number once I had it, but it would be a way to see just

how bad my location is (or isn't).

John

>
> ----- Original Message -----
> From: John Ackermann <jra@febo.com>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Thursday, July 08, 1999 5:48 AM
> Subject: [tacgps] TAC-32 question/request
>
>
> > I'm still struggling to find a good location for the GPS antenna at my
> > house. The difficulty is that I have a solid line of very tall trees
> > running east-west just south of the house, so my view of the southern
> > sky is not good.
> >
> > My first attempt to quantify my horizon visibility was to use SAWatch
> > to generate a satellite horizon plot. The problem with this is that as
> > long as you're plotting the lowest elevation at which a bird is seen,
> > the trees create an unduly optimistic result -- you'll often acquire a
> > satellite at a low elevation, only to lose it for a long, long time as
> > it passes through the leafy part of the trees.
> >
> > Anyway, I think it might be really useful to be able to generate an
> > average DOP value over time that could be used to quantify the quality
> > of an antenna system/location. Can TAC-32 do that? If not, would this
> > be a worthwhile addition? I'm not sure which of the many DOPs would be
> > the best one for this purpose; I'll leave that to the real experts.
> >
> > John N8UR
> > jra@febo.com
> >
> >
> Well, you do need the geometry (full sky in all directions) for best DOP.
> Your front yard is the best that I can remember, for the best sky. John,
> what is it that you want at your place, position or timing? Position is out
> in the street and measure back to your house. Timing, you only need a few
> satillites (boy, I forgot how many makes a few, HI, HI). I don't think I
> was much help, but I did want to say HI, anyway!
> 73's
> Doug
> >
> > ---
> > You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> > To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
>
>
> ---
> You are currently subscribed to tacgps as: JRA@FEBO.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] Re: TAC-32 question/request

From: "Borcher, David (NG-EX)" <DBorcher@GI.com>
Date: Thu, 08 Jul 1999 13:59:27 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29191-1999.07.08-16.04.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Actually, I think the DOP figures are somewhat academic for non-Differential

GPS, as SA overrides any small variations in fix accuracy related to the DOP
for positioning. DOP isn't supposed to make ANY difference in timing
accuracy
as far as I can tell from my reading. Therefore I am inferring that a DOP
number
influenced by local obscuration has no real effect on a timing application
but
certainly should on a positioning application after removing SA effects.

I have tried to make use of DOP for position determination by the simple
process

of dividing # satellites by DOP value. I take only the fixes that have a
'quality'
value >10 and take the position mean of those. A further step may be to use

the "trimmed mean" of the 'high quality' fixes (using MS EXCEL this is a
canned
function) where the maximum and minimum lat/lon values are not included in
the mean. As SA averages to zero over a large sampling and long time, I
believe I have zeroed in on a true position. It is interesting to note that
the
trimmed mean of the high quality fixes (about 2000 total) comes to a few
centimeters of the entire population of fixes (over 12,000) in 2-D, but the
3-D value of elevation differs by several meters.

All this is going toward establishment of a localized DGPS beacon using
the TAPR DGPS module.

Regards,
Dave Borcher K7NG
Tucson AZ

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: TAC-32 question/request

From: Randolph Bentson <bentson@grieg.holmsjoen.com>
Date: Thu, 8 Jul 1999 14:08:56 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29192-1999.07.08-16.16.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John Ackermann <jra@febo.com> wrote:
    My question was more general -- I'm just interesting in
    a way to characterize a "good" versus a "bad" gps site.

I too was curious about blockage issues. I wanted to
determine the effect of foliage and structures near my
place in Seattle. I collected data for several days
before plotting the location of satellites visible
during that interval. I thought that I'd see a profile
of my visible horizon.

I was surprised to discover a hole to the north. I
knew that the polar orbits had some inclination, but
I hadn't suspected the effect would be that strong.
In the end, a circle around Polaris spanning nearly
80 degrees, i.e., 40 degree radius, never contains
a satellite. You can fetch the plot from
http://www.aa.net/~bentson/polar.ps or
http://www.aa.net/~bentson/cartesian.ps

>From this, I now know that structures to the north
have a much smaller effect in blocking the view.

Randolph Bentson
bentson@holmsjoen.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Re: TAC-32 question/request

From: John Ackermann <jra@febo.com>
Date: Thu, 08 Jul 1999 17:12:44 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29193-1999.07.08-16.20.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> John Ackermann <jra@febo.com> wrote:
>   My question was more general -- I'm just interesting in
>   a way to characterize a "good" versus a "bad" gps site.
>
> I too was curious about blockage issues. I wanted to
> determine the effect of foliage and structures near my
> place in Seattle. I collected data for several days
> before plotting the location of satellites visible
> during that interval. I thought that I'd see a profile

> of my visible horizon.
>
> I was surprised to discover a hole to the north. I
> knew that the polar orbits had some inclination, but
> I hadn't suspected the effect would be that strong.
> In the end, a circle around Polaris spanning nearly
> 80 degrees, i.e., 40 degree radius, never contains
> a satellite. You can fetch the plot from
> http://www.aa.net/~bentson/polar.ps or
> http://www.aa.net/~bentson/cartesian.ps
>
> >From this, I now know that structures to the north
> have a much smaller effect in blocking the view.

I saw the same thing in my horizon plots -- they're at
http://www.febo.com/ntp/gps-horizon.html, by the way. There's also
little difference shown between a winter (no leaves) and summer (very
leafy) plot. Again, I think this is because the SAWatch plot shows
only the lowest elevation at which a satellite was seen, and doesn't
take into account the fact that there may only have been a couple of
fixes at that elevation before the bird disappeared again.

Too bad I don't live in the next block over, where the trees would be
to my north!!!

73,
John

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Re: TAC-32 question/request

From: John Ackermann <jra@febo.com>
Date: Thu, 08 Jul 1999 17:16:05 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29194-1999.07.08-16.23.39--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

By the way, I went back and looked at the horizon plots I did a year
ago with SAWatch and discovered that SAWatch did in fact generate an
average HDOP value! So, although this isn't a TAC-32 feature, SAWatch
does (and did...) what I want. I'm getting old and forgetful, I
guess...

John

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Re: Rubidium Frequency Standard Trade

From: "Doug McKinney" <buoy@redshift.com>
Date: Thu, 8 Jul 1999 22:45:40 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29282-1999.07.09-01.00.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Chuck Beuning <cbeuning@kscable.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Tuesday, July 06, 1999 7:35 PM
Subject: [tacgps] Rubidium Frequency Standard Trade

Chuck, I am interested. I have a UT+, antenna, VPGUIB (they have the PCB
layout for the TAC2 electronics) and enclosure to trade. My VPGUIB's are
sold by TAPR www.tapr.org/tapr/html/gpsf.html and my enclosures are shown
(1st rev) at www.tapr.org/~n7hpr/mcktech/ (2nd revision has imporved
interfacing). I am leaving on vacation for a few weeks, so if interested,
email me by tomorrow or call me at (831)663-4999, to make arrangements or
answer any questions.
73's
Doug

> I have followed this list for several years now and have enjoyed all the
> discussions.

>
> I plan to build several of Brook Shera's excellent GPS frequency standard
> controllers. I will need several Motorola VP or UT+ recievers along with
> antennas. As with all of my projects I try to keep the cash outlay to a
> minimun (ok, I'm cheap). I do have several surplus (tested and
> calibrated in my lab) Rubidium Frequency Standards (Efratom FRK) that I
> would be interested in trading. These are currently selling at $300-500 on
> the surplus market. If anyone has a Motorola GPS reciever system I would
> like
> to talk to them about trading a Rubidium for it. I am also looking for top
> quality crystal oscillators (SC style crystals).
>
> Thank you for your time.
>
> Chuck Beuning
> 316-721-8258
> Wichita, KS
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] SA effect across the same receivers

From: Jeff King <jeff@mich.com>
Date: Sun, 11 Jul 1999 12:53:46 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29661-1999.07.11-12.02.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Was wondering if someone could help me here.

If I have a group of identical GPS receivers in the same
area (within +- 1000metres), all seeing the same exact satellites,
will the positions I get negate S/A, at least with regards to
the receiver locations relative to each other? I want to
generate a map of all the receivers, and exact position is not
important, but relative position is.

Temperature will be similar at all locations, and some inaccuracy
due to osc variations is acceptable (like +-2 metres).

Thanks (and sorry for the non TACGPS topic, but you guys are the
most GPS savoy group within TAPR)

-Jeff wb8wka

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] RE: SA effect across the same receivers

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sun, 11 Jul 1999 13:14:46 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29662-1999.07.11-12.23.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff,

Yes, the relative accuracy will be similar to the accuracy attainable from
DGPS for similar station separations. About 2-5 meter accuracy, most
readings closer to 2 meter accuracy, assuming good DOP values. I did this
test years ago at O'Hare Int'l Airport to see how well two vehicles could
determine their relative positions when driving on a taxiway.

Rick

Richard M. Hambly
CNS Systems, Inc.
(410) 987-7835
rick@cnssys.com

http://www.cnssys.com/

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Jeff King
Sent: Sunday, July 11, 1999 12:54 PM
To: TAPR Special Interest Group
Subject: [tacgps] SA effect across the same receivers

Was wondering if someone could help me here.

If I have a group of identical GPS receivers in the same
area (within +- 1000metres), all seeing the same exact satellites,
will the positions I get negate S/A, at least with regards to
the receiver locations relative to each other? I want to
generate a map of all the receivers, and exact position is not
important, but relative position is.

Temperature will be similar at all locations, and some inaccuracy
due to osc variations is acceptable (like +-2 metres).

Thanks (and sorry for the non TACGPS topic, but you guys are the
most GPS savoy group within TAPR)

-Jeff wb8wka

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Re: SA effect across the same receivers

From: Lyle Johnson <lylej@azstarnet.com>
Date: Sun, 11 Jul 1999 17:32:59 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29664-1999.07.11-12.39.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:53 PM 7/11/99 -0400, you wrote:
>Was wondering if someone could help me here.
>
>If I have a group of identical GPS receivers in the same
>area (within +- 1000metres), all seeing the same exact satellites,
>will the positions I get negate S/A, at least with regards to
>the receiver locations relative to each other? I want to
>generate a map of all the receivers, and exact position is not
>important, but relative position is.

No. I tried this a couple years ago with a pair of receivers and the
antennas placed several meters apart. The plots showed the receivers
dancing and swirling about each other.

On the other hand, Rick reports a test at O'Hare that did work!

Take your pick :-)

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Re: SA effect across the same receivers

From: Brooks Shera <ebs@lanl.gov>
Date: Sun, 11 Jul 1999 11:50:42 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29665-1999.07.11-12.53.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>>Was wondering if someone could help me here.
>>
>>If I have a group of identical GPS receivers in the same

>>area (within +- 1000metres), all seeing the same exact satellites,
>>will the positions I get negate S/A, at least with regards to
>>the receiver locations relative to each other? I want to
>>generate a map of all the receivers, and exact position is not
>>important, but relative position is.
>
>No. I tried this a couple years ago with a pair of receivers and the
>antennas placed several meters apart. The plots showed the receivers
>dancing and swirling about each other.
>
>On the other hand, Rick reports a test at O'Hare that did work!

Lyle's dancing positions sounds like it might be caused by differences
in multipath at the two antennas. A few meters is not unreasonable
if the antenna locations are not too good. O'Hare probably provides
a better environment.

Something to keep in mind. Also how to keep all the receivers locked
to the same sats?

Brooks

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] Re: SA effect across the same receivers

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sun, 11 Jul 1999 13:47:36 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29666-1999.07.11-12.55.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Trick is to use identical receivers, Identical firmware, identical
satellites, and identical whatever. YOu must force each unit to only see
the same brids. Many receivers have their own selection algorithms, and
as soon as one sees a weak signal due to someone walking by the antenna
for example, that receiver will go off and do its own thing to find
another satellite. Then, all bets are off...

There is just too many thinkgs going on in firmware. But if you can
control those soft decisions, and absolutely force all receivers to always
look at the same satellites, then they should all give the same answer...
GOod luck. I doubt you will get consumer GPS units to all do the same
thing at the same time....

bob
 On Sun, 11 Jul 1999, Lyle Johnson wrote:

> At 12:53 PM 7/11/99 -0400, you wrote:
> >Was wondering if someone could help me here.
> >
> >If I have a group of identical GPS receivers in the same
> >area (within +- 1000metres), all seeing the same exact satellites,
> >will the positions I get negate S/A, at least with regards to
> >the receiver locations relative to each other? I want to
> >generate a map of all the receivers, and exact position is not
> >important, but relative position is.
>
> No. I tried this a couple years ago with a pair of receivers and the
> antennas placed several meters apart. The plots showed the receivers
> dancing and swirling about each other.
>
> On the other hand, Rick reports a test at O'Hare that did work!
>
> Take your pick :-)
>
> Lyle
>
> ---
> You are currently subscribed to tacgps as: BRUNINGA@NADN.NAVY.MIL
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

APRSdos REPLY/COMMENT:

Reply mail addr: wb4apr@amsat.org
US mail address: 115 old Farm Ct, Glen Burnie, MD 21060

```
See DAYTON97 HISTORY:    http://web.usna.navy.mil/~bruninga/dayton.html
See Maryland APRS LIVE:  http://web.usna.navy.mil/~bruninga/aprs.html
See GPS on ANY radio:    http://www.tapr.org/tapr/html/mic-e.html


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

17. [tacgps] Re: SA effect across the same receivers

```
From: Lyle Johnson <lylej@azstarnet.com>
Date: Sun, 11 Jul 1999 18:54:38 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29673-1999.07.11-14.00.36--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 11:50 AM 7/11/99 -0700, you wrote:
>>>Was wondering if someone could help me here.
>>>
>>>If I have a group of identical GPS receivers in the same
>>>area (within +- 1000metres), all seeing the same exact satellites,
>>>will the positions I get negate S/A, at least with regards to
>>>the receiver locations relative to each other? I want to
>>>generate a map of all the receivers, and exact position is not
>>>important, but relative position is.
>>
>>No.  I tried this a couple years ago with a pair of receivers and the
>>antennas placed several meters apart.  The plots showed the receivers
>>dancing and swirling about each other.
>>
>>On the other hand, Rick reports a test at O'Hare that did work!
>
>Lyle's dancing positions sounds like it might be caused by differences
>in multipath at the two antennas.  A few meters is not unreasonable
>if the antenna locations are not too good.  O'Hare probably provides
>a better environment.
>
>Something to keep in mind.  Also how to keep all the receivers locked
>to the same sats?

We then repeated the tests with a common antenna, isolated by
pre-amplfiers, etc.

Receivers tried in the tests were a pair of Motorola VP Oncores, then we
tried a pair of Trimble SK-8's, then we gave up and used differential
corrections :-)

Regards,

Lyle

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

18. [tacgps] Re: SA effect - O'Hare test

```
From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Sun, 11 Jul 1999 14:18:44 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29676-1999.07.11-14.26.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Richard M. Hambly <rick@cnssys.com>
> Jeff,
>
> Yes, the relative accuracy will be similar to the accuracy attainable from
> DGPS for similar station separations.  About 2-5 meter accuracy, most
> readings closer to 2 meter accuracy, assuming good DOP values.  I did this
> test years ago at O'Hare Int'l Airport to see how well two vehicles could
> determine their relative positions when driving on a taxiway.
>
> Rick
>
I will have to start watching who is visiting my neighborhood !!

G. Beat
41 deg 54' 12" N
87 deg 56' 16" W
```

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] RE: SA effect across the same receivers

From: Jeff King <jeff@mich.com>
Date: Sun, 11 Jul 1999 23:09:31 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29723-1999.07.11-22.17.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Rick:

What kind of recievers were these?

-Jeff

At 01:14 PM 7/11/99 -0400, Richard M. Hambly wrote:
>Jeff,
>
>Yes, the relative accuracy will be similar to the accuracy attainable from
>DGPS for similar station separations. About 2-5 meter accuracy, most
>readings closer to 2 meter accuracy, assuming good DOP values. I did this
>test years ago at O'Hare Int'l Airport to see how well two vehicles could
>determine their relative positions when driving on a taxiway.
>
>Rick
>
>Richard M. Hambly
>CNS Systems, Inc.
>(410) 987-7835
>rick@cnssys.com
>http://www.cnssys.com/
>
>
>-----Original Message-----
>From: bounce-tacgps-5621@lists.tapr.org
>[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Jeff King
>Sent: Sunday, July 11, 1999 12:54 PM
>To: TAPR Special Interest Group
>Subject: [tacgps] SA effect across the same receivers
>
>
>Was wondering if someone could help me here.
>
>If I have a group of identical GPS receivers in the same
>area (within +- 1000metres), all seeing the same exact satellites,
>will the positions I get negate S/A, at least with regards to
>the receiver locations relative to each other? I want to
>generate a map of all the receivers, and exact position is not
>important, but relative position is.
>
>Temperature will be similar at all locations, and some inaccuracy
>due to osc variations is acceptable (like +-2 metres).
>
>Thanks (and sorry for the non TACGPS topic, but you guys are the
>most GPS savoy group within TAPR)
>
>-Jeff wb8wka
>
>
>---
>You are currently subscribed to tacgps as: RICK@CNSSYS.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>---
>You are currently subscribed to tacgps as: JEFF@MICH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Re: SA effect across the same receivers

From: Jeff King <jeff@mich.com>
Date: Mon, 12 Jul 1999 12:58:35 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29809-1999.07.12-12.07.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 05:32 PM 7/11/99 +0100, Lyle Johnson wrote:
>
>
>No. I tried this a couple years ago with a pair of receivers and the
>antennas placed several meters apart. The plots showed the receivers
>dancing and swirling about each other.
>

This is what Tom Clark mentioned to me a year or so ago, and what prompted this question. When I tried it a few years ago (different project), we used the older Trimble 6 channel receivers and it did work, although Tom mentioned this might have been due to the satellite selection algorithm in this receiver. Tom brought up similar issues (and doubt) that you did Lyle (and I educated myself enough since then) that I am concerned about trusting this method across the board.

Bob Bruninga <bruninga@nadn.navy.mil> wrote:

>There is just too many thinkgs going on in firmware. But if you can
>control those soft decisions, and absolutely force all receivers to always
>look at the same satellites, then they should all give the same answer...
>GOod luck. I doubt you will get consumer GPS units to all do the same
>thing at the same time....

Well, what I am thinking is to use psedoranging code.... maybe the Garmin 25 with some of the code I see on the net for psedoranging. While I potentially
could have 100's of units in a 200mX1000M field, I only need to use GPS to pin down either end of the field, so to speak. I'm using a different method to map the field. Problem is of course, I don't know which unit will be at the end of the field, hence I need to use cheaper commercial GPS's to make it affordable.

Thanks for all the help

Regards,

Jeff King wb8wka

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] Re: SA effect across the same receivers

From: Tom Van Baak <tvb@veritas.com>
Date: Mon, 12 Jul 1999 10:31:56 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-29818-1999.07.12-12.49.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For those of you trying this with identical GPS receivers
and still getting imprecise plots I'd be interested to see
what a log of each receivers NMEA output, such as $GPGSV.
An hour of data or less would be enough to draw a conclusion.

The idea is to confirm if in fact each receiver uses the
same selection of satellites at all times. My guess is not
and this results in the disappointing relative accuracy.

Note that the extreme example of this idea - where multiple
receivers are looking at just one satellite at exactly the
same time for exactly the same number of seconds - is what
common view GPS is about.

Thanks,
/tvb

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Motorola UT+ Oncore

From: "Art Neilson, KH7PZ" <art@hawaii.rr.com>
Date: Thu, 15 Jul 1999 18:41:36 -1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-30273-1999.07.15-23.49.39--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can someone outline the differences between the TAC-2 board and
the Motorola Oncore VP/UT+/GT+ Interface Board SemiKit, both boards
available form TAPR? I ordered a Motorola UT+ Oncore today from
Synergy and am interested in what my interfacing options are.
I am primarily interested in using the 1 pps signal for network
timing. I am running the FreeBSD (Berkely UNIX 4.4) OS at the
home qth here, it is a firewall/gateway to the internet via cable
modem for my windows boxes. I am currently running xntpd on the system
and am grabbing the time off time-A.timefreq.bldrdoc.gov ntp server.
I want xntpd to sync the system clock to the oncore. Does anyone
have any suggestions or recommendations? I will need an interface
board of some sort to convert the TTL and also will need to get an
enclosure etc. Anybody else done something similar to this??

73's & Aloha, de KH7PZ Art Neilson in Hawaii

--

```
   __
  /  )    _/_  It is a capital mistake to theorise before one has data.
 /--/ __  /    Insensibly one begins to twist facts to suit theories,
/  (_/ (_<__   Instead of theories to suit facts.
                      -- Sherlock Holmes, "A Scandal in Bohemia"
```

Arthur W. Neilson III, KH7PZ
Bank of Hawaii Tech Support
art@hawaii.rr.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Re: SA effect across the same receivers

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Mon, 19 Jul 1999 11:31:35 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-30646-1999.07.19-10.39.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The question came up last week about whether different
receivers, operating close to each other, will produce
coherent positions & motions -- especially when they are
tracking the same satellites.

My answer is -- probably not, at least with modern receivers.
But you might have some luck with some antiques.

The early generation of GPS receivers lacked the CPU power
and software sophistication compared to more modern units.
They would select the best 4 (chosen on the basis of some xDOP
criterion) satellites in view. The C/A code pseudoranges for
the satellites were inverted to produce 4 observables -- the
user's 3-D position plus the bias in the receiver's internal
clock. Similarly 4 pseudorange-rate observations (apparent
doppler offsets) were processed to give the user's 3-D velocity
and the internal frequency offset of the receiver's local
oscillators. In this 1-to-1 observables <==> user parameter
mapping mode, then errors produced by S/A will be reproducable
between nearby receivers which make the same xDOP satellite
selections.

But the more modern receivers have benefitted from a LOT! more
CPU power (the Garmin GPS-III and III+ have an i386EX CPU --
comparable to desktop PCs of ~4 years ago). And they have
benefitted from a lot more sophistication in their internal
algorithms. It is normal for a user's receiver now to be tracking
9-10 satellites, averaging the all the errors (like S/A) and
improving the measurement by a significant factor over the
classical "Best-4" case. Since more observations (9-10 satellites
worth) are still used to produce the same 4 parameters, the over-
determined solution is now no longer a unique, 1-to-1 mapping
of the observables.

The way the over-determined data is used in the more modern receivers
has also changed. Now we find that adaptive (typically Kalman)
filters are used, with both the C/A code data and relative carrier
phase data feeding a computationally intensive "engine". If you
are moving, the estimate your receiver makes of your position
is not just the "static" value determined from the pseudorange
data, but it also has a predictive update determined from the
carrier phase (i.e. integrated "doppler" offset).

All of these processes make modern receivers work much better
than their antique (like 3-4 years old!) precursors. But the
performance improvement is achieved by these computational
processes that depend on past history and the detailed
performance of the receiver local oscillators. Since two
"identical" receivers do not have identical histories or
oscillators, there will be differences in their positions!

Hope this helped -- 73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

24. [tacgps] Re: Motorola UT+ Oncore

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Mon, 19 Jul 1999 13:31:58 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-30662-1999.07.19-12.40.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Art Neilson, KH7PZ wrote:
>
> Can someone outline the differences between the TAC-2 board and
> the Motorola Oncore VP/UT+/GT+ Interface Board SemiKit, both boards
> available form TAPR? [snip]

Functionally, there are a lot of similarities. Here is some info
on the differences:

The TAC-2 was designed by me as the 2nd generation version of my
original TAC. The original TAC was based around the early Motorola
PVT-6 receiver. Info on my original TAC is on my ftp site at
   ftp://aleph.gsfc.nasa.gov/GPS/totally.accurate.clock

When Motorola replaced the PVT-6 with the similar (but definitely
NOT a plug-in replacement!) 8-channel ONCORE, I did the TAC-2
board -- with both TAC designs stressing the needs of the precision
timing community, resulting in the TAC-2 having two Low-impedance 1 PPS
drivers. I took the opportunity of the upgraded design to make the
TAC-2 be a "universal" OEM GPS interface, so it was designed to support
all the Motorola, Trimble & Garmin receivers. Because the ONCORE has
only one serial port, but because some of us had the need for two
computers/data sources (e.g. a LINUX & Windoze box, or a computer plus
DGPS receiver), I designed the TAC-2 to provide a dual-port expansion.
All the I/O connections are designed with IDC "ribbon" cables in
mind. The TAC-2 has some headers for additional special purpose
boards to be stacked on it.

The Interface Board was done by Doug McKinney (KC3RL) around the
same time. Doug already had a simple, minimal board for the ONCOREs
with just an RS232 converter & a small switching supply. I worked
with him to make sure his board provided two critical timing functions
from the TAC-2 -- the 1 PPS in RS232 format is sent to the computer,
and one his board has one channel of the low-Z 1PPS drivers from the
TAC-2. To heep the IB simple, the "outside-world" connections are
simple solder pads. To support the Garmin OEM receivers, Doug
elected to design a second board optimized for that application.
And Doug's ONCORE IB served as the basis for Steve Bible's (N7HPR)
DGPS generator.

So the main difference is that the TAC-2 is the more expensive, more
universal board. The IB has been stripped down to provide all the
essential features a lower cost. For straight-forward applications,
they are functionally identical. Rick Hambly's (WB2TNL) companion TAC32
software (see the TAPR web site and http://www.cnssys.com) supports
both generations of TAC, both of Doug's boards, and Steve's DGPS
board.

Hope that helped -- 73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] Re: Motorola UT+ Oncore

From: "Ira A. Wilner" <bdcst@sover.net>
Date: Mon, 19 Jul 1999 16:05:21 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-30693-1999.07.19-15.30.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Dr Thomas A Clark (W3IWI) <clark@tomcat.gsfc.nasa.gov>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Monday, July 19, 1999 1:32 PM
Subject: [tacgps] Re: Motorola UT+ Oncore

>Art Neilson, KH7PZ wrote:
>>
>> Can someone outline the differences between the TAC-2 board and
>> the Motorola Oncore VP/UT+/GT+ Interface Board SemiKit, both boards
>> available form TAPR? [snip]
>
>Functionally, there are a lot of similarities. Here is some info
>on the differences:
>
>The TAC-2 was designed by me as the 2nd generation version of my
>original TAC. The original TAC was based around the early Motorola
>PVT-6 receiver.

Hey Tom,

How about a TAC-3 board for the new fast acquisition 12 channel Oncores?

--Ira

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] New Dielectric Patch Antenna at Digikey

From: SCHULTZ@CDDIS.GSFC.NASA.GOV
Date: Wed, 21 Jul 1999 21:11:30 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: SCHULTZ@CDDIS.GSFC.NASA.GOV
Message-ID: <LYR6754-31024-1999.07.21-20.14.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just got the new Digikey catalog. On page 292 they have a Dielectric
Patch antenna from Toko, for GPS. Resonates at 1580.5 MHz, frequency
shifts 5 MHz lower with a radome. Measures about 1 inch square.

Part Number TK5150-ND, price $17.33

Dan Schultz N8FGV

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] Re: SA effect across the same receivers

From: Jeff King <jeff@aerodata.net>
Date: Fri, 23 Jul 1999 19:28:04 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: jeff@aerodata.net
Message-ID: <LYR6754-31244-1999.07.23-18.38.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Tom:

I've gotten one yes, one no, and one qualified no answer
(your's) on this question. So I still hold hope I am not
explaining this clearly enough.

At 11:31 AM 7/19/99 -0400, Dr Thomas A Clark (W3IWI) wrote:
>The question came up last week about whether different
>receivers, operating close to each other, will produce
>coherent positions & motions -- especially when they are
>tracking the same satellites.

That was me.

>
>My answer is -- probably not, at least with modern receivers.
>But you might have some luck with some antiques.

OK, so your saying, in summary, that the newer receivers make
some assumptions that the older receivers were not able to
make. And these assumptions are not coherent across a group
of identical receivers seeing identical satellites.

Ok, so lets toss away the receivers assumptions and go with psedoranging
data (which admittedly I haven't used yet).

How about (as I asked in a earlier message) we just take the
psedoranging data (like from a Garmin 25) and use this to
compute our position?

Again, the parameters are as follows:
All receivers looking at same satellites
All receivers at same temperature
All receivers not moving relative to each other (stationary)
All receivers within 500 meters (or less) of each other.

I require a RELATIVE position across this field of receivers,
it can be off by as much as S/A, but I am hoping across the
field of receivers, S/A will not affect relative position.

On a related note, can anyone suggest a text, oriented towards
a software algorithm developer, relating to GPS? I've seen a number
but most are either two simple, or don't relate to a actual
developer of GPS applications.

Thanks!

-Jeff

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Where? DGPS decoder for Win98/dos

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Sat, 24 Jul 1999 17:37:32 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31337-1999.07.24-16.46.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All!
        I have nearly finished (?) my OncoreVP to RTCM converter program.

        I am now in the final debugging phase and I need to read my output to see
if it makes sense at all. I can dump the output easily in a text file at
this point.

        I am looking for a prog that will read the text file and show me the
decoded output.

        The part I feel needs the most checking is the RTCM parity coding logic. I
think the part I used is not OK since it is straight from the GPS parity
algorithm. It is written from the perspective of a station RECEIVING the
data, not sending... Those who help me with this can have the program just
for the asking! (There are a couple of restrictions but nothing unheard of,
like having an Oncore VP!)

        The main reason I need some help is because I possess only an Oncore VP...
I am arranging with a local station to borrow his GPS during testing.

        The program is written in QuickBasic 4.5, NOT Qbasic from dos 5.x and will
be distributed compiled. Any DOS/Windows computer, even The Ol' Boat Anchor
should do...

Thanks in advance,
Martin VE2MRX
Near Montreal, Quebec, Canada
FN35jn

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] Sv: Where? DGPS decoder for Win98/dos

From: "Kurt Poulsen" <lhmobil@post4.tele.dk>
Date: Sun, 25 Jul 1999 23:37:17 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31449-1999.07.25-16.41.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Martin

Have a look at:
http://www.fh-bochum.de/fb5/baeumker/homemb0.htm

And you will find what You are searching.

Unfortunately the documentation is in German but the software written in English and I do not think You will find it difficult to use. If any problem the author writes nicely english and I can help You as german is my second foreign language. It even has some features og first byte checksum/parity being 1 or Ø.

I look forward to hear more of Your program, I use the TAPR DGPS Unit but have had my problems, as it sometimes wanders off quite considerable. I have had many nice e-mails forth and bach with Steven Temple.
If You need a first class TRCM signal (Leica Generated) dial 004520989810 and enjoy being charged for intenational calls !!!!

Kind regards

Kurt

----- Oprindelig meddelelse -----
Fra: Boissonneault, Martin (A) <ve2mrx@amsat.org>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sendt: lørdag, juli 24, 1999 11:37
Emne: [tacgps] Where? DGPS decoder for Win98/dos

> Hi All!
> I have nearly finished (?) my OncoreVP to RTCM converter program.
>
> I am now in the final debugging phase and I need to read my output to see
> if it makes sense at all. I can dump the output easily in a text file at
> this point.
>
> I am looking for a prog that will read the text file and show me the
> decoded output.
>
> The part I feel needs the most checking is the RTCM parity coding logic. I
> think the part I used is not OK since it is straight from the GPS parity
> algorithm. It is written from the perspective of a station RECEIVING the
> data, not sending... Those who help me with this can have the program just
> for the asking! (There are a couple of restrictions but nothing unheard of,
> like having an Oncore VP!)
>
> The main reason I need some help is because I possess only an Oncore VP...
> I am arranging with a local station to borrow his GPS during testing.
>
> The program is written in QuickBasic 4.5, NOT Qbasic from dos 5.x and will

> be distributed compiled. Any DOS/Windows computer, even The Ol' Boat Anchor
> should do...
>
>
> Thanks in advance,
> Martin VE2MRX
> Near Montreal, Quebec, Canada
> FN35jn
>
> [E_O_MSG]
>
> mailto:ve2mrx@amsat.org
> mailto:ve2mrx@rac.ca
> ----------------------
> Martin VE2MRX
> Beloeil, Quebec, Canada
> FN35jn
>
>
> ---
> You are currently subscribed to tacgps as: LHMOBIL@POST4.TELE.DK
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] Re: Where? DGPS decoder for Win98/dos

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Mon, 26 Jul 1999 09:05:34 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31521-1999.07.26-08.14.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Martin,
 You're in luck !! I just got my RTCM type 1 message decoding program
working last weekend.
It's written in "C" for DOS. It will take a data file and decode it to the
screen. The parity check even works!!
The parity didn't turn out to be the hardest thing. Things that come to mind
are: the "padding" of the 6 data
bits with "01" in the HOB of the byte, the "reversing" of the order of the
remaining 6 bits, and the realization
that the *D30 parity bit inverts the data in the next word if set. I used
Borland Turbo "C" ver 2.0 to compile
the source. I can send you the executable and/or the source and some "live"
data, if you (or anyone else)
is interested. I am also working on the encoding of the Motorola Oncore
messages into RTCM. My 6-chan
Oncore outputs "@@Ce" messages. I have decoded and printed the data
successfully. I have now
started to encode them into RTCM. If we have 2 programs that do that, one from
you and one from me,
that's great. I plan to make all my sources public. That will help to rectify
my beef with TAPR on their
"closed policy" with their DGPS board. At least someone can look at my code,
and see what's involved in
the project. And it becomes a base for further improvements, and
experimentation.

  Jim Korenz   N8PXW

bounce-tacgps-5599@lists.tapr.org on 07/24/99 05:38:31 PM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Where? DGPS decoder for Win98/dos

Hi All!
 I have nearly finished (?) my OncoreVP to RTCM converter program.

 I am now in the final debugging phase and I need to read my output to
see

if it makes sense at all. I can dump the output easily in a text file at
this point.

 I am looking for a prog that will read the text file and show me the
decoded output.

 The part I feel needs the most checking is the RTCM parity coding
logic. I
think the part I used is not OK since it is straight from the GPS parity
algorithm. It is written from the perspective of a station RECEIVING the
data, not sending... Those who help me with this can have the program just
for the asking! (There are a couple of restrictions but nothing unheard of,
like having an Oncore VP!)

 The main reason I need some help is because I possess only an Oncore
VP...
I am arranging with a local station to borrow his GPS during testing.

 The program is written in QuickBasic 4.5, NOT Qbasic from dos 5.x and
will
be distributed compiled. Any DOS/Windows computer, even The Ol' Boat Anchor
should do...

  Thanks in advance,
   Martin VE2MRX
    Near Montreal, Quebec, Canada
     FN35jn

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: Where? DGPS decoder for Win98/dos

From: "Dr Thomas A Clark (W3IWI)" <clark@tomcat.gsfc.nasa.gov>
Date: Mon, 26 Jul 1999 13:56:26 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: TAPR Special Interest Group <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31561-1999.07.26-13.05.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jim -- congratulations on the decoder. I'll be anxious to see it.

<<<< FLAME ON >>>>

I would like to pick serious nits about one negative statement you made:

> ... I plan to make all my sources public. That will help to rectify
> my beef with TAPR on their "closed policy" with their DGPS board.
> At least someone can look at my code, and see what's involved in
> the project ...

I think you are off-base in implying that TAPR has any "closed policy".
Most of the TAPR projects represent the attempt of the not-for-profit TAPR
organization to make hi-tech, state-of-the-art projects of individuals be
available to a wider community. In these projects, the intellectual
property rights reside with the original builders, and it is their personal
right to make decisions about the basis by which the information is made
available.

These individuals made the investment of blood, sweat, tears, time and
money to make the projects "happen". In some cases they may decide to only

want to give away free some portion of their efforts and reserve some rights for themselves. Perhaps they even have delusions of grandeur that their efforts might have personal worth (money?? fame??) to a bigger community. Or perhaps they just don't want to be deluged by questions about the inner minute details.

I will use my TAC-2 as the example because I can speak with authority about my own decisions. In the case of the supporting software I wrote (SHOWTIME), I chose to give away only executable code and extensive information on the algorithms contained therein.

I gave TAPR the PCB artwork on the premise that the kits would be made available to scientific users too.

As a scientist working for the US Gov't, I am subject to some pretty bizarre conflict-of-interest rules. Although the TAC was a "home basement" project, I made the personal decision to give the community (via TAPR) my designs FREE, rather than trying
to fight NASA's lawyers for permission to capitalize on my personal "inventions".

I made the personal decision not to give away SHOWTIME source code for several reasons (although I reiterate that I made the underlying algorithms and concepts available quite openly!):

(a) The code was "ugly" in that it was written in a bizarre, antique language (compiled Microsoft QB4.5 QuickBasic) and I didn't want to spend hours defending my decision to use such archaic resources against the religious attacks of purists.

(b) The inner code loops were pretty clever, but they were a bitch to explain. When you give code to amateurs, documentation ain't enough. I learned this lesson in the early 80's when I published a state-of-the-art set of code for tracking satellites in elliptical orbits with the really primitive computers we had in those bygone days of yore. My code was adapted to a number of the other early computers by other volunteers and made available thru AMSAT. Even now I get a few irate midnite phone calls every year saying "Your damn software won't run on my Radio Shack Color Computer" (when I never even had a CoCo and that wasn't the platform I used nearly 20 years before). Sometimes it isn't worth the hassle to publish detailed code that may be hard for the non-cognoscenti to grok!

(c) I wanted the ability to "screen" people who were using the code to make sure that performance was not compromised. As a result I >>DID<< make the detailed algorithms available to a few people of my choice to advance the state-of-the-art. One outcome was a Master's thesis for a student at an Ivy League university. Another was Rick Hambly's TAC32 windows adaptation.

In the case of the TAPR DGPS project, the "author" was Steve Bible, N7HPR. Steve made the personal investment of time/$$$ to figure out the RTCM SC-104 specification as well as the ONCORE binary definition, to figure out how to program a PIC to do the format conversions, and (working with KC3RL) to convert the concept to working hardware and firmware. I'm sure that Steve felt that his personal time/$$$ investment was worth protecting.

Since I'm yelling from atop a personal soapbox, I don't think it is appropriate for you to tell the volunteer "inventors" how they should "spend" their personal time/$$$ resources, or for you to blame TAPR for making technology available to the masses !!!

<<<< FLAME OFF >>>>

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] Re: Where? DGPS decoder for Win98/dos

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Mon, 26 Jul 1999 16:58:38 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31572-1999.07.26-16.07.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Jim!
        I thank you for your reply. I do understand what you're going through when you talk about coding RTCM.

        My program seems to be giving good data now. The "problem" was in fact about 15 glitches in different modules... I tracked them one at a time using a Trimble DOS prog sent to me by a sigger.

        A major one was a bad bit offset used in one of the RTCM words. I did this in QuickBasic 4.5 and had to "invent" many routines to work binary. One of those converts a signed float to a signed binary array of bits. I had forgotten to pull out the MSB's value from the original number before converting the rest of the number. That put from -3 to 3 instead of 0 & 1 in a binary array... Yikes! I also had variables not passed correctly from SUB to SUB, and so on... I should have slept instead of coding, it seems... |^P

        If you can read QB, I might contribute to your project my RTCM coding modules. I sure would like to see your work! I do not work C so the executable would be fine. BTW, my compiled prog would fit in a 160k 5.25" single side floppy with plenty of room left!

        I planned licensing my prog as 15$US for Ham radio purposes, as long as the result is available to the community in general. That meant that using it for a company but being a ham won't do (That would have to be discussed, as of any licensing that would result in money making for the licensee or commercial user). It also means that using it privately but being a ham won't do (Personal use would be 20$). I want to help ham radio's DGPS coverage for apps like APRS and field activities. I wrote my prog to put a DGPS corr. station on APRS in Montreal.

        My intent is to reach the folks who would do it but are stomped by the high price (for my Canadian $ pocket) of the otherwise very good DGPSIB from Steve Bible N7HPR / TAPR. (I have to admit my first intent was to use one.)

        The requirement is to have a Motorola Oncore VP, a DOS capable computer, about 256k ram and ONE serial port. As for the speed, it will be decided by the rate at which the Oncore VP sends it's @@Ce messages, from one set per sec. to one set per 255 sec. A simple "Y" serial cable has to be made so the computer gets data from the oncore on one side and send the RTCM to the "consumer" (Computer RXD on one connector, Computer TXD on the other, plus GND). A small HP Palmtop would be enough!

        As for Y2K and GPS week roll-over, the prog is as compliant as your GPS unit! The prog does not use dates or times, except as given by the GPS in Z-Count.

                Martin VE2MRX

N.B. I inserted a few comments below.
[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
On Behalf Of JIM KORENZ
Sent: Monday, July 26, 1999 08:06
To: TAPR Special Interest Group
Subject: [tacgps] Re: Where? DGPS decoder for Win98/dos

Hi Martin,
        You're in luck !! I just got my RTCM type 1 message decoding program working last weekend. <snip>

--> Great!

The parity didn't turn out to be the hardest thing. Things that come to mind are: the "padding" of the 6 data bits with "01" in the HOB of the byte, the "reversing" of the order of the remaining 6 bits, and the realization that the *D30 parity bit inverts the data in the next word if set.

--> Those are routines I did in the beginning. I had no problems with them, once I understood why. I had info from Pete Prossen, WA6ZUH, about RTCM msg. type 1, plus some notes about RTCM to ASCII conversion/bit roll. My fear was parity because I wasn't sure QB would get it right.

I used Borland Turbo "C" ver 2.0 to compile the source. I can send you the executable and/or the source and some "live" data, if you (or anyone else) is interested. I am also working on the encoding of the Motorola Oncore messages into RTCM. My 6-chan Oncore outputs "@@Ce" messages. I have decoded and printed the data successfully. I have now started to encode them into RTCM.

--> I sure hope you have the Oncore's User Manual! The Mot bin protocol is sometimes hard to read! More precisely, the @@ "preamble" CAN be in the data stream... The VP sends two of @@Ce since it is 8 chan. and the msg. contains only 6. Unused is zero-filled.

If we have 2 programs that do that, one from you and one from me, that's great. I plan to make all my sources public. That will help to rectify my beef with TAPR on their "closed policy" with their DGPS board. At least someone can look at my code, and see what's involved in the project. And it becomes a base for further improvements, and experimentation.

<Note to All: A post from Dr Thomas A Clark (W3IWI) has already explained the reasons why Steve Bible, N7HPR, might have decided not to release the source. That's Steve's decision, NOT TAPR's. Post any follow-up on that subject to /DEV/NULL, the bit bucket(Recycle bin), or File 13. Martin VE2MRX>

--> I will try to keep my sources open, but probably under non-commercial/non-disclosure agreement. I would not like to see people make money with my prog without giving me some compensation for my hard work... I will try to respect the spirit of ham radio to the best I can however.

Jim Korenz N8PXW

--> Martin Boissonneault, VE2MRX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

33. [tacgps] Re: Where? DGPS decoder for Win98/dos

From: Steve Sampson <ssampson@www.usa-site.net>
Date: Mon, 26 Jul 1999 18:12:35 -0500 (CDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31583-1999.07.26-18.21.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Jim -- congratulations on the decoder. I'll be anxious to see it.

Ditto

> <<<< FLAME ON >>>>
>
[snip]
> In the case of the TAPR DGPS project, the "author" was Steve Bible, N7HPR.
> Steve made the personal investment of time/$$$ to figure out the RTCM
> SC-104 specification as well as the ONCORE binary definition, to figure out
> how to program a PIC to do the format conversions, and (working with KC3RL)
> to convert the concept to working hardware and firmware. I'm sure that
> Steve felt that his personal time/$$$ investment was worth protecting.
>

I would like to point out another aspect. Most of us have at least 40 hours a week plus jobs, and other things compete for our time. In my case that translates to my going "off-the-shelf" by getting the TAPR kit with the

TAC32. Even if there was a $50 solution, I would not change the path I
chose, as I have a disposable income for those things that interest me
a lot, but not the time to duplicate.

There is always a homebrew project for a more expensive alternative,
but after age 40 "time is money" has greater meaning. I used to spend hours
on minute bit twiddling routines in C and Z-80, but now enjoy spending hours
making a walnut grained cabinet to house an "off-the-shelf" solution :-)

Steve
"BASIC programs given away for free, are overpriced"

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

34. [tacgps] Re: Where? DGPS decoder for Win98/dos

From: mdmiller@eaze.net
Date: Mon, 26 Jul 1999 18:38:02 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31585-1999.07.26-18.47.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Congrats Martin. I have not been working on my program. I think I am
going to shift mine to Linux. Great comment on the GPS Sig. I love it
when those guys get stirred up.

73

Mark N5RFX

At 05:37 PM 7/24/99 -0400, you wrote:
>Hi All!
>   I have nearly finished (?) my OncoreVP to RTCM converter program.
>
>   I am now in the final debugging phase and I need to read my output to see
>if it makes sense at all. I can dump the output easily in a text file at
>this point.
>
>   I am looking for a prog that will read the text file and show me the
>decoded output.
>
>   The part I feel needs the most checking is the RTCM parity coding logic. I
>think the part I used is not OK since it is straight from the GPS parity
>algorithm. It is written from the perspective of a station RECEIVING the
>data, not sending... Those who help me with this can have the program just
>for the asking! (There are a couple of restrictions but nothing unheard of,
>like having an Oncore VP!)
>
>   The main reason I need some help is because I possess only an Oncore VP...
>I am arranging with a local station to borrow his GPS during testing.
>
>   The program is written in QuickBasic 4.5, NOT Qbasic from dos 5.x and will
>be distributed compiled. Any DOS/Windows computer, even The Ol' Boat Anchor
>should do...
>
>
>   Thanks in advance,
>   Martin VE2MRX
>   Near Montreal, Quebec, Canada
>   FN35jn
>
>[E_O_MSG]
>
>mailto:ve2mrx@amsat.org
>mailto:ve2mrx@rac.ca
>-----------------------
>Martin VE2MRX
>Beloeil, Quebec, Canada
>FN35jn
>
>
>---
>You are currently subscribed to tacgps as: MDMILLER@EAZE.NET
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] Sv: Where? DGPS decoder for Win98/dos

From: "Kurt Poulsen" <lhmobil@post4.tele.dk>
Date: Tue, 27 Jul 1999 01:48:08 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31586-1999.07.26-18.52.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Martin

Just another hint about RTCM monitor programs

Look at csi-dgps.com/library/software/index.htm

Kind regards

Kurt OZ7OU

----- Oprindelig meddelelse -----
Fra: Boissonneault, Martin (A) <ve2mrx@amsat.org>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sendt: lørdag, juli 24, 1999 11:37
Emne: [tacgps] Where? DGPS decoder for Win98/dos

> Hi All!
> I have nearly finished (?) my OncoreVP to RTCM converter program.
>
> I am now in the final debugging phase and I need to read my output to see
> if it makes sense at all. I can dump the output easily in a text file at
> this point.
>
> I am looking for a prog that will read the text file and show me the
> decoded output.
>
> The part I feel needs the most checking is the RTCM parity coding logic. I
> think the part I used is not OK since it is straight from the GPS parity
> algorithm. It is written from the perspective of a station RECEIVING the
> data, not sending... Those who help me with this can have the program just
> for the asking! (There are a couple of restrictions but nothing unheard of,
> like having an Oncore VP!)
>
> The main reason I need some help is because I possess only an Oncore VP...
> I am arranging with a local station to borrow his GPS during testing.
>
> The program is written in QuickBasic 4.5, NOT Qbasic from dos 5.x and will
> be distributed compiled. Any DOS/Windows computer, even The Ol' Boat Anchor
> should do...
>
>
> Thanks in advance,
> Martin VE2MRX
> Near Montreal, Quebec, Canada
> FN35jn
>
> [E_O_MSG]
>
> mailto:ve2mrx@amsat.org
> mailto:ve2mrx@rac.ca
> ----------------------
> Martin VE2MRX
> Beloeil, Quebec, Canada
> FN35jn
>
>
> ---
> You are currently subscribed to tacgps as: LHMOBIL@POST4.TELE.DK
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

36. [tacgps] End of VP Oncore

From: Lyle Johnson <lylej@azstarnet.com>
Date: Tue, 27 Jul 1999 00:56:06 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@tapr.org
Message-ID: <LYR6754-31595-1999.07.26-20.11.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!

I have discovered that the VP Oncore will cease production the end of this
year, and that orders for them must be placed by 15 November.

I am not aware of any other low-cost product that provides Pseudo-range
output...

73,

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] Re: End of VP Oncore

From: Dave Martindale <davem@cs.ubc.ca>
Date: Mon, 26 Jul 1999 19:09:48 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31604-1999.07.26-21.17.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I have discovered that the VP Oncore will cease production the end of this
>year, and that orders for them must be placed by 15 November.

>I am not aware of any other low-cost product that provides Pseudo-range
>output...

The Garmin GPS 25LP provides pseudorange and carrier phase output via its
second serial port - perhaps that would do what you want?

On the other hand, it does *not* provide DGPS correction info that
could be turned into a RTCM data stream.

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] Re: End of VP Oncore

From: Lyle Johnson <lylej@azstarnet.com>
Date: Tue, 27 Jul 1999 02:12:20 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31605-1999.07.26-21.20.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 07:09 PM 7/26/99 -0700, you wrote:

>The Garmin GPS 25LP ... does *not* provide DGPS correction info that
>could be turned into a RTCM data stream.

This was what I meant to say.

Does anyone know of another low-cost board that can be used for a DGPS
reference station?

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

39. [tacgps] Re: End of VP Oncore

From: mdmiller@eaze.net
Date: Mon, 26 Jul 1999 22:05:42 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31615-1999.07.26-22.15.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Does anyone know of another low-cost board that can be used for a DGPS
>reference station?
>
>Lyle

It looks like the Motorola M12 Oncore might support the Motorola DGPS output.

<http://www.mot.com/ACCES/GPS/products/prodm12.html>

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

40. [tacgps] Re: End of VP Oncore

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Mon, 26 Jul 1999 22:24:56 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31619-1999.07.26-22.33.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lyle -

I have not seen the prices for the M12. I assume that these new
12 channel designs are much more expensive.

G. Beat

http://www.mot.com/ACCES/GPS/products/gpsprod.html

----- Original Message -----
From: Lyle Johnson <lylej@azstarnet.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Cc: <tacgps@tapr.org>
Sent: Monday, July 26, 1999 6:56 PM
Subject: [tacgps] End of VP Oncore

> Hi!
>
> I have discovered that the VP Oncore will cease production the end of this
> year, and that orders for them must be placed by 15 November.
>
> I am not aware of any other low-cost product that provides Pseudo-range
> output...
>
> 73,
>
> Lyle
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] Re: End of VP Oncore

From: macomson@em-tw01
Date: Tue, 27 Jul 1999 11:28:23 +0800 (CST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31620-1999.07.26-22.36.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> >Does anyone know of another low-cost board that can be used for
> >a DGPS reference station?
> >
> >Lyle
>
> It looks like the Motorola M12 Oncore might support the Motorola
> DGPS output.

>
> <http://www.mot.com/ACCES/GPS/products/prodm12.html>
> 73
> Mark Miller
> N5RFX

All they have is a brief product blurb right now (".pdf" format), but
it says in part:

        "...includes support capability for inverse differential
        GPS, which allows for improved positioning at a central base
        station to support services requiring higher accuracy such
        as automotive and telematics applications."

Anybody care to speculate exactly what this means? I suspect there
are people on this list who know a lot more :)

-wis
--
Wis Macomson
c/o Wis_Macomson@mentor.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

42. [tacgps] Re: End of VP Oncore

From: "Doug McKinney" <buoy@redshift.com>
Date: Mon, 26 Jul 1999 20:52:37 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31629-1999.07.26-23.08.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: <macomson@em-tw01>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, July 26, 1999 8:28 PM
Subject: [tacgps] Re: End of VP Oncore

> > >Does anyone know of another low-cost board that can be used for
> > >a DGPS reference station?
> > >
> > >Lyle
> >
> > It looks like the Motorola M12 Oncore might support the Motorola
> > DGPS output.
> >
> > <http://www.mot.com/ACCES/GPS/products/prodm12.html>
> > 73
> > Mark Miller
> > N5RFX
>
> All they have is a brief product blurb right now (".pdf" format), but
> it says in part:
>
> "...includes support capability for inverse differential
> GPS, which allows for improved positioning at a central base
> station to support services requiring higher accuracy such
> as automotive and telematics applications."
>
> Anybody care to speculate exactly what this means? I suspect there
> are people on this list who know a lot more :)
>
> -wis
> --
> Wis Macomson
> c/o Wis_Macomson@mentor.com
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

The M12 is a smaller GT+ , but with 12 channels and operates on 3vdc with
0.23 watts of power and cost will be under the price of the GT+. When the
VP goes, Motorola will not have a GPS engine which provides DGPS output and
carrier phase. First OEM units will be out next month will be out next
month.

73's
Doug
KC3RL

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

43. [tacgps] Re: End of VP Oncore

From: Lyle Johnson <lylej@azstarnet.com>
Date: Tue, 27 Jul 1999 04:46:37 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31630-1999.07.26-23.54.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 11:28 AM 7/27/99 +0800, you wrote:
>All they have is a brief product blurb right now (".pdf" format), but
>it says in part:
>
>   "...includes support capability for inverse differential
>   GPS, which allows for improved positioning at a central base
>   station to support services requiring higher accuracy such
>   as automotive and telematics applications."
>
>Anybody care to speculate exactly what this means? I suspect there
>are people on this list who know a lot more :)

Inverse DGPS is where all the rovers report information back to central,
which then applies the reference information and figures out where everyone
is. It is used by "big brother" operations where they figure it isn't
important that you know where you are, but it is important that big brother
knows where you are. Like taxicabs, police cars and ambulances. This way
the rovers don't need to receive DGPS broadcasts.

Sigh.

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

44. [tacgps] Re: End of VP Oncore

From: "Daniel J. Bernal" <dabernal@cantv.net>
Date: Sun, 25 Jul 1999 08:03:16 -0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31660-1999.07.27-07.09.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

I´m currently using the Garmin GPS-25 and it´s just fine. The cost is 135
without any accessory.

I saw in the net a Charmin card for about US$ 89.00. Go to
http://www.chapmantech.com/ and if you try this please let me know how is
going.

Forgive my English.

Daniel Bernal
GTE Electronica C.A.
Daniel@Bernal.com
dbernal@gte-ve.com
Venezuela.

-----Mensaje original-----
De: Doug McKinney <buoy@redshift.com>
Para: TAPR Special Interest Group <tacgps@lists.tapr.org>
Fecha: Martes, 27 de Julio de 1999 04:01 a.m.
Asunto: [tacgps] Re: End of VP Oncore

>
>----- Original Message -----
>From: <macomson@em-tw01>
>To: TAPR Special Interest Group <tacgps@lists.tapr.org>

>Sent: Monday, July 26, 1999 8:28 PM
>Subject: [tacgps] Re: End of VP Oncore
>
>
>> > >Does anyone know of another low-cost board that can be used for
>> > >a DGPS reference station?
>> > >
>> > >Lyle
>> >
>> > It looks like the Motorola M12 Oncore might support the Motorola
>> > DGPS output.
>> >
>> > <http://www.mot.com/ACCES/GPS/products/prodm12.html>
>> > 73
>> > Mark Miller
>> > N5RFX
>>
>> All they have is a brief product blurb right now (".pdf" format), but
>> it says in part:
>>
>> "...includes support capability for inverse differential
>> GPS, which allows for improved positioning at a central base
>> station to support services requiring higher accuracy such
>> as automotive and telematics applications."
>>
>> Anybody care to speculate exactly what this means? I suspect there
>> are people on this list who know a lot more :)
>>
>> -wis
>> --
>> Wis Macomson
>> c/o Wis_Macomson@mentor.com
>>
>> ---
>> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
>> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>>
>
>The M12 is a smaller GT+ , but with 12 channels and operates on 3vdc with
>0.23 watts of power and cost will be under the price of the GT+. When the
>VP goes, Motorola will not have a GPS engine which provides DGPS output and
>carrier phase. First OEM units will be out next month will be out next
>month.
>73's
>Doug
>KC3RL
>
>
>
>---
>You are currently subscribed to tacgps as: daniel@bernal.com
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

45. [tacgps] Re: End of VP Oncore

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 27 Jul 1999 13:48:04 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31724-1999.07.27-12.58.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lyle,

The only OEM GPS receiver that I know of that can output differential
corrections is the Ashtech G-12. In fact, with the proper option installed,
it will output RTCM SC-104. But at a cost of $2995.0, it is a little steep.

Information on the G-12 can be found at the Navtech web site:

http://www.navtechgps.com/supply/g12.asp

or the Ashtech web site:

http://www.ashtech.com

73,

- Steve

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

46. [tacgps] SA Off

From: Gary Thurmond <thga@mbari.org>
Date: Tue, 27 Jul 1999 13:37:10 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31744-1999.07.27-15.45.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If I read SAWatch correctly, SA is turned off.
I just received a new Magellan 2000XL and logged data for about 18 hours
to check it out.
Has anyone caught the beginning and logged it all?

Gary, w6str
[Attachment: SAWatchReport.txt; text/plain; 1,006 bytes]

47. [tacgps] Re: End of VP Oncore

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 27 Jul 1999 18:40:48 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31764-1999.07.27-17.48.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:56 AM 7/27/99 +0100, you wrote:
>Hi!
>
>I have discovered that the VP Oncore will cease production the end of this
>year, and that orders for them must be placed by 15 November.
>
>I am not aware of any other low-cost product that provides Pseudo-range
>output...

Lyle, the only other OEM GPS receiver that I am aware of is the Ashtech
G-12. But at $2995.00, that does not define low-cost :-(.

Information on the G-12 and it's RTCM capabilities is available:

   http://www.navtechgps.com/supply/g12.asp

73,

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

48. [tacgps] Sv: Re: End of VP Oncore

From: "Kurt Poulsen" <lhmobil@post4.tele.dk>
Date: Wed, 28 Jul 1999 00:58:42 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31782-1999.07.27-18.03.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Everyone

There is another source for GPS receiver which outputs RTCM SC-104, and which is said to be low cost
whatever that is.
It is the ALLSTAR from Canadian Marconi.
It also outputs Code Phase Measurements in CMC binary format which can be used for Calculation
Pseudorange.
Look at http://www.marconi.ca/Docs/CMC/Components/basestat.html
An application note about calculation of Pseudorange is available also:
http://www.marconi.ca/Docs/CMC/Components/gpsoemteche.html

Info about a monitor program is on the same page.
and the User manual/ reference manual is also found on that page:
Can any of You tell me the price as the danish distributor does not respond to my enquiry, and are probably "profit hungry".

Kind regards

E.K.Poulsen OZ7OU

----- Oprindelig meddelelse -----
Fra: Steven R. Bible <srbible@gate.net>
Til: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sendt: tirsdag, juli 27, 1999 07:48
Emne: [tacgps] Re: End of VP Oncore

> Lyle,
>
> The only OEM GPS receiver that I know of that can output differential
> corrections is the Ashtech G-12. In fact, with the proper option installed,
> it will output RTCM SC-104. But at a cost of $2995.0, it is a little steep.
>
> Information on the G-12 can be found at the Navtech web site:
>
> http://www.navtechgps.com/supply/g12.asp
>
> or the Ashtech web site:
>
> http://www.ashtech.com
>
> 73,
>
> - Steve
>
>
>
> ---
> You are currently subscribed to tacgps as: LHMOBIL@POST4.TELE.DK
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

49. [tacgps] Re: End of VP Oncore

From: Lyle Johnson <lylej@azstarnet.com>
Date: Tue, 27 Jul 1999 23:56:57 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31791-1999.07.27-19.13.26--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Steve!

Yes, I am aware of this one. We use it at work (and get it for a lot less
than $2995), but I was thinking more of your DGPS-IB board and typical
Amateur users.

73,

Lyle
At 01:48 PM 7/27/99 -0400, you wrote:
>Lyle,
>
>The only OEM GPS receiver that I know of that can output differential
>corrections is the Ashtech G-12. In fact, with the proper option installed,
>it will output RTCM SC-104. But at a cost of $2995.0, it is a little
steep.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

50. [tacgps] RTCM SC-104 encoder for PC, works !!

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Wed, 28 Jul 1999 09:03:35 -0400

To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31845-1999.07.28-08.12.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
 Just a status report on my latest project. At 11:45 PM last night I got
the Mot to RTCM
converter program to emit data that the RTCM reader could decode without parity
errors.
This was done with "dead" data, old Mot data recorded to a file a couple of
days ago. The
output was likewise, to a file for anaylsis. All the "easy" stuff, satno, IODE,
station id,
message type, header, seq no, health are correct. I had a question about the
Mot
GPS time to RTCM z-count. Martin answered me, and he appears to be calculating
it the same as I do. For the most part, the PRC and PRCC values are identical.
Every
once in a while they seem to vary quite a bit. (i.e. mot 33.58 rtcm 33.28).
Since the
conversion converts from 24-bit integers to 16-bit integers (or 16 bit to 8
bit), one
could lose 8 bits of info, and this could certainly modify the values. I want
to go
through the exceptions by hand to verify that this is what's happening. After
that,
the next test is to verify operation on "live" data, and send the data to my
Magellean GPS, and see if it enters DGPS mode with my corrections. All this is
happening in my basement workshop. I currently have only one external GPS
antenna
cabled to my bench. For this test, I will need two external antennas, or maybe
a splitter on my current coax, to run both GPS units. I have seen splitters for
sale
for about $5 for the DDS satellite TV systems that split 950-1450 MHz. Has
anyone
 used one of these to run 2 GPS units? I also work a 40 hour week, and do
foxhunts
(which is how I got interested in GPS). I have a foxhunt tonight, and I am
helping my
brother work on his Jeep rear wheel bearings, so it may be a week or two before
I am satisfied with the program's operation. I will post a message when the
"final"
version is ready.
  Jim Korenz   N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

51. [tacgps] Re: RTCM SC-104 encoder for PC, works !!

From: Robert Winingham <kc5ejk@onramp.net>
Date: Wed, 28 Jul 1999 14:22:23 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31888-1999.07.28-14.30.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Hi All,
> Just a status report on my latest project. At 11:45 PM last night I got
>the Mot to RTCM
>converter program to emit data that the RTCM reader could decode without parity
>errors.
>This was done with "dead" data, old Mot data recorded to a file a couple of
>days ago. The
>output was likewise, to a file for anaylsis. All the "easy" stuff, satno, IODE,
>station id,
>message type, header, seq no, health are correct. I had a question about the
>Mot
>GPS time to RTCM z-count. Martin answered me, and he appears to be calculating
>it the same as I do. For the most part, the PRC and PRCC values are identical.
>Every
>once in a while they seem to vary quite a bit. (i.e. mot 33.58 rtcm 33.28).
>Since the
>conversion converts from 24-bit integers to 16-bit integers (or 16 bit to 8
>bit), one
>could lose 8 bits of info, and this could certainly modify the values. I want
>to go
>through the exceptions by hand to verify that this is what's happening. After
>that,
>the next test is to verify operation on "live" data, and send the data to my
>Magellean GPS, and see if it enters DGPS mode with my corrections. All this is

>happening in my basement workshop. I currently have only one external GPS
>antenna
>cabled to my bench. For this test, I will need two external antennas, or maybe
>a splitter on my current coax, to run both GPS units. I have seen splitters for
>sale
>for about $5 for the DDS satellite TV systems that split 950-1450 MHz. Has
>anyone
> used one of these to run 2 GPS units? I also work a 40 hour week, and do
>foxhunts
>(which is how I got interested in GPS). I have a foxhunt tonight, and I am
>helping my
>brother work on his Jeep rear wheel bearings, so it may be a week or two before
>I am satisfied with the program's operation. I will post a message when the
>"final"
>version is ready.
> Jim Korenz   N8PXW
>

Good info and thanks for the update.

would you open the line length of the mail program so I DON'T need to reformat each line
by hand ,thanks.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

52. [tacgps] RE: RTCM SC-104 encoder for PC, works !!

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Wed, 28 Jul 1999 15:23:41 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31890-1999.07.28-14.36.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all!
        That's me, again. I again added a few comments of my own below...

                Martin VE2MRX

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of JIM KORENZ
Sent: Wednesday, July 28, 1999 08:04
To: TAPR Special Interest Group
Subject: [tacgps] RTCM SC-104 encoder for PC, works !!

Hi All,
        Just a status report on my latest project. At 11:45 PM last night I
got the Mot to RTCM converter program to emit data that the RTCM
reader could decode without parity errors. This was done with "dead"
data, old Mot data recorded to a file a couple of days ago. The output
was likewise, to a file for anaylsis. All the "easy" stuff, satno,
IODE, station id, message type, header, seq no, health are correct.

MB>   I noticed it wouldn't decode all my data properly... Trimble says
I am ok, DCI too... Another prog keeps saying "Message too long!" (?).
I attached some of my data, "formatted" for sending over packet (Just
added a CR at the end of the message to trigger the TNC in sending).
There is a max of 14 words, unlike your prog that tries to decode 24,
I think. You may have one or two bad offsets... Like I did (Write some

data, then write over the previous bit...).

        I had a question about the Mot GPS time to RTCM z-count. Martin
answered me, and he appears to be calculating it the same as I do. For
the most part, the PRC and PRCC values are identical. Every once in a
while they seem to vary quite a bit. (i.e. mot 33.58 rtcm 33.28).
Since the conversion converts from 24-bit integers to 16-bit integers
(or 16 bit to 8 bit), one could lose 8 bits of info, and this could
certainly modify the values. I want to go through the exceptions by
hand to verify that this is what's happening.

MB>   You remember the Scale Factor Flag? You have to scale by 0.02m /
0.002m/s (SF=0) or 0.32m / 0.032m/s (SF=1) so the values fit in signed
8 or 16 bits. Remember to ROUND, not chop, the LSB's decimals. Which I
am not doing yet :(. You don't loose 8 bits, but 1 or 5...

        After that, the next test is to verify operation on "live" data, and
send the data to my Magellean GPS, and see if it enters DGPS mode with
my corrections. All this is happening in my basement workshop. I
currently have only one external GPS antenna cabled to my bench. For
this test, I will need two external antennas, or maybe a splitter on
my current coax, to run both GPS units. I have seen splitters for sale
for about $5 for the DDS satellite TV systems that split 950-1450 MHz.
Has anyone used one of these to run 2 GPS units?

MB>   I don't, but I send my output via packet to VE2AW's TH-D7... He
lives about 1.5km away, and has a known good position to compare
with... More details if needed.

        I also work a 40 hour week, and do foxhunts (which is how I got
interested in GPS). I have a foxhunt tonight, and I am helping my
brother work on his Jeep rear wheel bearings, so it may be a week or
two before I am satisfied with the program's operation. I will post a
message when the "final" version is ready.

MB>   Please refer to the previous postings of Mark Miller and Steve R.
Bible for the progs I used to verify my output... One note: The
Trimble prog has a "bug" in that it will show in the UDRE field the SF
Flag + UDRE... That means UDRE + SF * 4...

                Jim Korenz   N8PXW

MB>   Martin Boissonneault

You are currently subscribed to tacgps as: VE2MRX@INAME.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
[Attachment: rtcm.txt; text/plain; 10,274 bytes]

53. [tacgps] Info about the Marconi GPS's

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Wed, 28 Jul 1999 15:40:04 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31895-1999.07.28-14.58.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Kurt, Hi all!
        Living in the Greater Montreal area, where Marconi has it's main
office, I sent them an email. All the info is on the site, at the
links pointed before.

        The price list attached is in US$. If I read right, their model that
spits RTCM SC-104 is 2000$. But, if the model 220-600944-0xx AllStar
gives the right info (Z-count, Sat ID, PRC, PRRC, IODE) then, at
~275$, that would be great... It's a 12 channel, 2 serial ports
unit...

        Go see their specs, they are good!

        For trackers, check our their SuperStar line... If TAPR got 100 of
them, they would be
~100$ea.

                Yours truly,
                        Martin VE2MRX
[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca

mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Kurt Poulsen
Sent: Tuesday, July 27, 1999 17:59
To: TAPR Special Interest Group
Subject: [tacgps] Sv: Re: End of VP Oncore

Hello Everyone

There is another source for GPS receiver which outputs RTCM SC-104,
and which is said to be low cost whatever that is.
It is the ALLSTAR from Canadian Marconi.
It also outputs Code Phase Measurements in CMC binary format which can
be used for Calculation Pseudorange.
Look at http://www.marconi.ca/Docs/CMC/Components/basestat.html
An application note about calculation of Pseudorange is available
also:
http://www.marconi.ca/Docs/CMC/Components/gpsoemteche.html
Info about a monitor program is on the same page.
and the User manual/ reference manual is also found on that page:
Can any of You tell me the price as the danish distributor does not
respond to my enquiry, and are probably "profit hungry".

Kind regards

E.K.Poulsen OZ7OU
[Attachment: PRICES~4.PDF; application/pdf; 71,803 bytes]

54. [tacgps] Receivers Capable of Generating DGPS

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Thu, 29 Jul 1999 04:34:34 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31959-1999.07.28-23.44.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I too am sad that Motorola is discontinuing the VP.

Yes, the Ashtech and CMC boards seem to offer a several thousand $$$
alternative to the ~$300 VP. There are also several options at the
$10k+ level in the geodetic surveying receivers offered by Trimble,
Ashtech, etc [My original W3IWI-13 DGPS beacon used a ~$25,000
Trimble 4000SSE].

If you need a "I need to buy one" source for most of the OEM receivers
mentioned the past few days, check out NavTech Bookstore at URL

     http://www.navtechgps.com/

NavTech is also the community's source for documentation, books, etc,
and offer lectures on many aspects of GPS.

FYI -- The Canadian Marconi receiver is based on the chipset developed
by GEC Plessey with an ARM CPU. A complete "open architecture"
development kit for this chipset is available with complete with
source code for ~$15k.

Regarding the generation of DGPS signals: remember that the DGPS
corrections are the pseudorange (PR) and pseudorange rate (PRR)
errors that result if the receiver's position is fixed at a "perfect"
known value.

One of the reasons that the ONCORE does a good DGPS job is
that Motorola built in a "zero-D" constrained position mode from
the start. [Of course, this is the "magic bullet" I used to defeat
SA and achieve global timing at levels of tens of nsec in the TAC.]

If you can't lock the receiver to a fixed position, then you need
to have the receiver deliver raw PR/PRR data for each satellite
to you along with the precise ephemerides so that you can
compute the errors in a separate computer.

So --- there is some possibility that a receiver that delivers
high accuracy PR/PRR data coupled with a PC-class computer
running geodetic-quality software (that doesn't yet exist) could
do the job to replace the ONCORE. [I know of one company in
Scandanavia that invested tens of man years trying to do a similar
job with rather poor success. But then they needed to guarantee
that ferry boats travelling in the fog in narrow fjords at >50 km/hr
wouldn't crash and kill people!]

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

55. [tacgps] RE: "Large" attachments

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Thu, 29 Jul 1999 01:00:51 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31973-1999.07.29-00.19.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi.
        Just to clarify, I sent the attachment:

                1-   It is under 70kb, What I hardly call big. 100kb would not have
been sent, however.

                2-   The info I sent was emailed to me by a Marconi representative,
and was NOT on the web site. So, to prevent Marconi from receiving 50
emails requesting a price list, I posted it here.

                3-   If, by the way, you find 70kb a "large binary attachment", then,
I conclude, you're certainly not subscribed to the APRS sig. (I do not
pay by-the-byte, and I often find the volume high...) I do admit I
haven't thought of people receiving this on a Palm...

                        Sorry, Martin VE2MRX

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: Phil Reed [mailto:pcr@ic.net]
Sent: Wednesday, July 28, 1999 17:11
To: ve2mrx@amsat.org
Subject: Re: [tacgps] Info about the Marconi GPS's

Please do not send large binary attachments to mailing lists,
especially if
the information is available from a web site. Some mailing programs,
including mine, break. Some people, including me, pay by the minute.
It's
very impolite.

                                        ...phil

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

56. [tacgps] Re: End of VP Oncore

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Thu, 29 Jul 1999 08:22:38 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-31996-1999.07.29-07.31.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Good Morning All,
 I was cruising the Motorola web pages, and I see that they sell a chip
set for GPS.
With all the talent that TAPR has, can't we assemble and program a VP
replacement,
and offer it to all who are interested? I don't know what Mot will provide as
"canned"
software, but I think it's definitely worth investigating. Or maybe Synergy,
may
be persuaded in picking up the ball. I know that they offer all kinds of
modified
Mot GPS units. Just some thoughts.
 Jim Korenz   N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

57. [tacgps] OnCore chip set & the new M12 GPS Receiver

From: Mastenbrook Gary-G13216 <Gary.Mastenbrook@motorola.com>
Date: Thu, 29 Jul 1999 12:46:04 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32051-1999.07.29-12.54.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Fellow GPS'ers,
I had the opportunity to speak today with one of the GPS receiver program
managers about the pending demise of the OnCore VP receiver. My friend
confirmed that the new M12 currently does not have the needed message to
support the DGPS reference station capability as available now in the VP
receiver. (He also indicated that he was receiving feedback from customers
about this issue with the new M12 receiver.)

One comment made was that the referenced website chipset which was the basis
for the VP has been discontinued by the SPS organization. Apparently there
was some form of lifetime buy situation which has now been completed, and
there is no longer any opportunity to purchase the referenced chipset by
itself. (You can expect to see this webpage go away soon.)

I'm putting in a plug with the GPS program management team for adding in the
needed message(s) for reference station capabilities (although I also plan
to recommend adding a direct RTCM messaging output capability on the second
serial port). All hope is not yet lost, but only time will tell on this
one.

One final thought: I heard that all comments regarding this subject are
apparently being logged and forwarded to the GPS team. I take this to mean
if enough customer's comment, there may be an opportunity for a change to be
made in this decision.

73's
Gary N8DMT

Gary Mastenbrook, Technology Manager, Motorola Telematics
50 E. Commerce Drive, Schaumburg, IL 60173
Email: g13216@email.mot.com
Work Home Page: http://www.mot.com
Personal Home Page: http://www.qsl.net/n8dmt

-----Original Message-----
From: JIM KORENZ [mailto:jfkorenz@goodyear.com]
Sent: Thursday, July 29, 1999 7:23 AM
To: TAPR Special Interest Group
Subject: [tacgps] Re: End of VP Oncore

Good Morning All,
 I was cruising the Motorola web pages, and I see that they sell a chip
set for GPS. With all the talent that TAPR has, can't we assemble and
program a VP
replacement, and offer it to all who are interested? I don't know what Mot
will provide as "canned" software, but I think it's definitely worth
investigating. Or maybe Synergy, may be persuaded in picking up the ball. I

know that they offer all kinds of modified Mot GPS units. Just some
thoughts.
 Jim Korenz   N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

58. [tacgps] RE: Modified Z count

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Thu, 29 Jul 1999 20:23:44 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32090-1999.07.29-19.42.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Mark!
        To the best of my memory, it is the same as the one we talked
about...

        The Modified Z-Count is from 0 to 3599.9 seconds. That's 1 hour.
However, it is stored in RTCM as the number of 0.6 sec "chunks" in the
modified Z-Count. So, 1 = 0.6sec, where the max value is 5999 or
3599.4 sec... Then, it rolls back to 0.

        The algorithm I posted removes everything bigger than 1 hour to leave
only the minutes (less than 3600 seconds). To do this, I divide the
Z-count by 3600 to get the Z-count in hour format. I strip the decimal
part and multiply back by 3600. Now, we have everything we DON'T want.
Subtract this from Z-Count and you have Modified Z-Count!

        Now to code it to RTCM: Divide Modified Z-Count by 0.6 and round, not
chop, the decimals. Remember that the LSB if worth 0.6 sec, so if you
chop it, you might be off by 0.6 sec. That could cause errors...

                Martin VE2MRX
[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: mdmiller@eaze.net [mailto:mdmiller@eaze.net]
Sent: Thursday, July 29, 1999 18:37
To: ve2mrx@amsat.org
Subject: Modified Z count

Martin,

Did you use the modified Z count theory that you and I discussed some
months ago?   Or did you come up with another algorithm?

73
Mark Miller
N5RFX

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

59. [tacgps] RE: RTCM formats

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Thu, 29 Jul 1999 20:38:34 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32091-1999.07.29-19.52.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Jim!
        Actually, the unused space in the last RTCM word is filled as
"01010101"... Unfortunately, the starting value is still a gray area
for me. Maybe Pete Prossen could fill this in? He went and got the
RTCM SC-104 spec document... The last time we spoke about that, he was

in the dark also...

-----Original Message-----
From: JIM KORENZ [mailto:jfkorenz@goodyear.com]
Sent: Thursday, July 29, 1999 11:55
To: ve2mrx@iname.com
Subject: RTCM formats

Hi Again,
 I was thinking more about your word count. The way I do it, I parse
the
Mot msg first, and count and
save the sat data. For the no. of words, I use len = no of sat * 40 /
24. That
is, each sat needs 40 bits
of data, but each RTCM word, while 30 bits long, can carry only 24
bits of sat
data. I then check
the remainder, and if non-zero, bump the no of words by one. You do
know that
you can't send a fixed
message length that contains 8 sat, if some aren't used. The Mot
format has an
extra bit for the sat no,
so a zero means data not available. The RTCM msg uses zero as sat 32,
so if you
"pad" the RTCM msg
with zero satellites, the target will see that as multiple corrections
for sat
32. The correct way is
to send a variable length message, including only the active sat data.
  JimK N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

60. [tacgps] RE: RTCM reader

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Thu, 29 Jul 1999 22:18:14 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32109-1999.07.29-21.27.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
        I feel confused now. To the best of my knowledge, the parity has to
be applied BEFORE the conversion to ASCII. That is since Coast guard
stations sent the same messages, but over a serial radio link. The
info is sent bit by bit, not byte by byte, as far as I can tell... (I
cannot confirm this first hand, however.) So, the bit roll is applied
to ANY byte...

        As for the inversion from D*30, I do not understand. From what I
have, D30 of the PREVIOUS word (D*30) says if the CURRENT word has
it's data inverted... and the inversion is done AFTER the parity
coding... The parity is done on "d", the "raw" data, not "D", the
"cooked" data. So is the xor with D*30...

        To the best I see, the progs say my parity is ok, as the Word Count
(which has been counted manually and put as lookup in a table
depending of the number of sats)is supposed to. Confirmation of this
is wanted, however! BTW, the Trimble prog shows the SV Count, NOT the
Word Count... The DCI progs do, however...

        In light of the invert on D*30, not D30, the second word you sent me
should read

       Z COUNT   SEQ   COUNT   HEALTH   parity
    1 0010 1011 0010   111   0 0111   100   10 0001
    1 2   B   2   7   0 7   4   2 1   SEQNO 7, WORD CNT
7 (3 sats)
       Z-COUNT 12B2 = 4786 * 0.6 = 2871.6 SEC

                and not

       Z COUNT   SEQ   COUNT   HEALTH   parity
    0 1101 0100 1101   000   1 1000   011   01 1110

```
    0  D    4    D      0    1  8      3      1  E   SEQNO 0, WORD CNT
24
       Z-COUNT 0D4D = 3405 * 0.6 = 2043. SEC

        I will try to decode manually a few of my messages by hand. (Funny,
but I didn't think of that!) I am not yet convinced that my data is
good (You sould not have brought this, I have doubts now! ;) )

                Martin
[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net
-----------------------
Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: JIM KORENZ [mailto:jfkorenz@goodyear.com]
Sent: Thursday, July 29, 1999 09:40
To: ve2mrx@iname.com
Subject: RE: RTCM reader


Hi Martin,
 Please check the enclosure, for a quick  data analysis.
I had a chance to check a line or two of your data. It seems that you
do the data bit inversion, when its not needed. The D30 parity bit of
the
previous word determines whether this word's data bits are inverted.
You
calculate the correct parity, so you must be using the correct D30
there.
If D30 is set, the data in the next word is 1's complimented, but not
the
6 parity bits. I hope I explained that clearly. Also, even if we
invert the
bits,
your "LENGTH" field comes out to 7, but you seem to be sending a total
of 14 words, which requires a length of 12. I hope this helps out.
This
analysis was done by hand. I will see what the RTCMON program
comes up with, when I get a chance to run it.
 Keep up the good work,
  JimK   N8PXW




---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

61. [tacgps] RE: Oncore VP replacement Comments

```
From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Fri, 30 Jul 1999 15:39:52 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32227-1999.07.30-14.49.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
        Here is what I posted on their comments page:

Hi!
  I am the proud owner of an Oncore VP with 1BC options. I use the
unit in a home-made DGPS reference station. Being a ham radio
operator, I plan to make this station available freely for all radio
amateurs to use.

  HOWEVER: Since the Oncore VP will soon be discontinued and it does
not seem to have a replacement, one lightning strike is all that is
needed to put out the station permanently...

  The Oncore VP is popular among ham radio hobbyists and the
scientific community for it's precise time (0D mode), pseudorange
correction output (@@Ce output message), ease of use, and
affordability...
```

The amateur radio community likes to experiment with "high technology", as long as it fits in our hobby's budget... Tucson Amateur Packet Radio, a not-for-profit organization, has made the Oncore VP available to us through group purchases. They also developed many projects around it as well. Some of those, very useful, need the Oncore to operate.

I looked for a replacement, but the equivalents the market offers, costing upwards of 2000$US per unit, are aimed at companies who sell services based on those GPS Receivers. They are clearly out of range for ham radio uses! Remember that ham radio is a hobby for which law prohibits any compensation. That means that I am the only person paying for my DGPS station. No one will ever pay to use it.

Martin Boissonneault
Hamradio operator VE2MRX
Beloeil, Quebec, Canada

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Mastenbrook Gary-G13216
Sent: Thursday, July 29, 1999 12:46
To: TAPR Special Interest Group
Subject: [tacgps] OnCore chip set & the new M12 GPS Receiver

Fellow GPS'ers,
I had the opportunity to speak today with one of the GPS receiver program
managers about the pending demise of the OnCore VP receiver. My friend
confirmed that the new M12 currently does not have the needed message to
support the DGPS reference station capability as available now in the VP
receiver. (He also indicated that he was receiving feedback from customers
about this issue with the new M12 receiver.)

<snip>

One final thought: I heard that all comments regarding this subject are
apparently being logged and forwarded to the GPS team. I take this to mean
if enough customer's comment, there may be an opportunity for a change to be
made in this decision.

73's
Gary N8DMT

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

62. [tacgps] GPS article

From: John Koster <w9ddd@tapr.org>
Date: Fri, 30 Jul 1999 16:45:59 -0500 (CDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32246-1999.07.30-16.54.59--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The August issue of Circuit Cellar started a series of articles on GPS receiver information. The first part is an introduction which does get into the NEMA protocol.

The web site for Circuit Cellar is www.circuitcellar.com

TAPR is listed as a source of "GPS units/service" at the end of the article.

Someone might want to re-post this on the APRS lists?

John Koster, W9DDD
<w9ddd@tapr.org>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

63. [tacgps] Re: End of VP Oncore

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Sat, 31 Jul 1999 19:10:58 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32371-1999.07.31-18.19.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> Good Morning All,
> I was cruising the Motorola web pages, and I see that they sell a chip=
>
> set for GPS.
> With all the talent that TAPR has, can't we assemble and program a VP
> replacement,
> and offer it to all who are interested? I don't know what Mot will prov=
> ide as
> "canned"
> software, but I think it's definitely worth investigating. Or maybe Syn=
> ergy,
> may
> be persuaded in picking up the ball. I know that they offer all kinds o=
> f
> modified
> Mot GPS units. Just some thoughts.
> Jim Korenz   N8PXW
> =

http://www.u-blox.ch has info about an interesting GPS receiver.

The document:

http://www.u-blox.ch/restricted/protocol.pdf (you will have to
register) describes their protocol and tells how to calculate
pseudo-range measurements.

Am I correct that the raw pseudo-range information is what we need to
compute DGPS signals?

I don't have any price information, but as far as I can tell, this is
intended to be an OEM product family. There is also a development kit
which includes the capability to add code to the built-in processor.

Based on that, we should be able to build a receiver which generates a
DGPS data stream without an additional processor.

Any comments?

Ken

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

64. [tacgps] Re: End of VP Oncore

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Sat, 31 Jul 1999 23:59:09 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32415-1999.07.31-23.13.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Kenneth.

        From the info I have, pseudo-range is not what we need for DGPS. That

info is used by many expensive progs to compensate for SA, ephemeris errors, Tropospheric and Ionospheric propagation with data from other sources. I believe Inverse DGPS uses that also.

For DGPS, what we need is pseudo-range ERROR. Most receivers that have this, if not all, also have "0-D" mode. The GPS receiver does not compute positions, it only reports the pseudo-range error between what the sats beam down and what it should be. The receiver NEEDS to be told where it is and put in "0-D" (time) mode for this to work...

That's why the Oncore VP is "special". We get all that for less that 300$...

Martin VE2MRX

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Kenneth Lerman
Sent: Saturday, July 31, 1999 18:11
To: TAPR Special Interest Group
Subject: [tacgps] Re: End of VP Oncore

<snip>

http://www.u-blox.ch has info about an interesting GPS receiver.

The document:

http://www.u-blox.ch/restricted/protocol.pdf (you will have to register) describes their protocol and tells how to calculate pseudo-range measurements.

Am I correct that the raw pseudo-range information is what we need to compute DGPS signals?

I don't have any price information, but as far as I can tell, this is intended to be an OEM product family. There is also a development kit which includes the capability to add code to the built-in processor.

Based on that, we should be able to build a receiver which generates a DGPS data stream without an additional processor.

Any comments?

Ken

--
Kenneth Lerman Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited Fax: (203)426-9138
55 Main Street Voice: (203)426-4430
Newtown, CT 06470 http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: VE2MRX@INAME.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

August 1999

Original source file: tacgps.9908
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9908

1. [tacgps] [Fwd: your email message]

From: Kirk Alexander <kirk@Princeton.EDU>
Date: Mon, 02 Aug 1999 00:15:35 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32546-1999.08.01-23.23.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
Is the DGPS Error functionality we get from TAPR from just the Motorola
or
 from the DGPSIB?  If the latter couldn't it be slightly redesigned to
operate
 with the Rockwell Zodiac or the Garmin 25 or the u-blox which provide
raw
 pseudo-range and 1PPS outputs?
 --
Kirk Alexander
MGR, Multimedia Engineering Computation Atelier
School of Engineering and Applied Science
Princeton University
Princeton, NJ 08544
609-258-5420 (tel)
609-258-6744 (fax)
kirk@princeton.edu
http://www.princeton.edu/~kirk/

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

2. [tacgps] Re: [Fwd: your email message]

From: Dave Martindale <davem@cs.ubc.ca>
Date: Sun, 01 Aug 1999 23:16:42 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32562-1999.08.02-01.25.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
At 12:15 AM 02/08/99 -0400, you wrote:
>
> Is the DGPS Error functionality we get from TAPR from just the Motorola
>or
> from the DGPSIB?  If the latter couldn't it be slightly redesigned to
>operate
> with the Rockwell Zodiac or the Garmin 25 or the u-blox which provide
>raw
> pseudo-range and 1PPS outputs?

The Motorola receiver calculates the pseudorange error and rate of change
of error internally, and outputs them in a proprietary binary format at
some fixed rate.  All the DGPSIB does is take that data, reformat it into
RTCM format messages, add some necessary additional stuff (e.g. station ID)
and then transmit it at pre-selected intervals.  But all the computationally
difficult stuff is done by the Oncore.  (This is my understanding from
reading manuals - error corrections welcome).

In theory, you could achieve the same thing given any other GPS module that
could output pseudoranges and precise ephemeris data.  You'd need a computer
running software that uses the known location of the antenna and the precise
ephemeris data to calculate true pseudoranges, then subtract off the measured
pseudoranges to get pseudorange error and rate of change of error.  The catch
is that writing this software is likely to be non-trivial.

        Dave

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

3. [tacgps] Re: [Fwd: your email message]

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 2 Aug 1999 09:47:18 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32600-1999.08.02-08.57.27--lyris.tacgps#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Kirk, your question is confusing. I assume you are talking about the pseudo range and pseudo range rate errors values needed to do pseudo range differential corrections. Yes, the Motorola Oncore VP is the only low-cost OEM that we know of that will do this for DGPS. No, the Rockwell or Garmin do not do this.

We're stuck id Motorola or someone else does not have a similar system to do low cost DGPS.

- Steve

----- Original Message -----
From: Kirk Alexander <kirk@Princeton.EDU>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, August 02, 1999 12:15 AM
Subject: [tacgps] [Fwd: your email message]

>
> Is the DGPS Error functionality we get from TAPR from just the Motorola
> or
> from the DGPSIB? If the latter couldn't it be slightly redesigned to
> operate
> with the Rockwell Zodiac or the Garmin 25 or the u-blox which provide
> raw
> pseudo-range and 1PPS outputs?
> --
> Kirk Alexander
> MGR, Multimedia Engineering Computation Atelier
> School of Engineering and Applied Science
> Princeton University
> Princeton, NJ 08544
> 609-258-5420 (tel)
> 609-258-6744 (fax)
> kirk@princeton.edu
> http://www.princeton.edu/~kirk/
>
> ---
> You are currently subscribed to tacgps as: SRBIBLE@GATE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Re: [Fwd: your email message]

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 2 Aug 1999 09:52:06 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32604-1999.08.02-09.02.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Very well said Dave.

There are two different methods of Differential GPS, 1) Pseudo Range and 2) Carrier Phase. It is number 1) that the Oncore VP does. The pseudo range and pseudo range rate errors are outputted in the Motorola Binary Format and the DGPSIB reformats that into the RTCM SC-104 format that many commercial GPS receviers understand.

Carrier Phase is a much different animal and more difficult to do. The exercise is left to the student :-).

There are very good books on DGPS. I recommend the "Red" books published by ION.

- Steve

----- Original Message -----
From: Dave Martindale <davem@cs.ubc.ca>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, August 02, 1999 2:16 AM
Subject: [tacgps] Re: [Fwd: your email message]

> At 12:15 AM 02/08/99 -0400, you wrote:
> >
> > Is the DGPS Error functionality we get from TAPR from just the Motorola
> >or
> > from the DGPSIB? If the latter couldn't it be slightly redesigned to
> >operate
> > with the Rockwell Zodiac or the Garmin 25 or the u-blox which provide
> >raw
> > pseudo-range and 1PPS outputs?
>
> The Motorola receiver calculates the pseudorange error and rate of change
> of error internally, and outputs them in a proprietary binary format at
> some fixed rate. All the DGPSIB does is take that data, reformat it into
> RTCM format messages, add some necessary additional stuff (e.g. station
ID)
> and then transmit it at pre-selected intervals. But all the
computationally
> difficult stuff is done by the Oncore. (This is my understanding from
> reading manuals - error corrections welcome).
>
> In theory, you could achieve the same thing given any other GPS module
that
> could output pseudoranges and precise ephemeris data. You'd need a
computer
> running software that uses the known location of the antenna and the
precise
> ephemeris data to calculate true pseudoranges, then subtract off the
measured
> pseudoranges to get pseudorange error and rate of change of error. The
catch
> is that writing this software is likely to be non-trivial.
>
> Dave
>
> ---
> You are currently subscribed to tacgps as: SRBIBLE@GATE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Post correction DGPS?

From: chrise@n0jcf.com (Chris Elmquist)
Date: Mon, 2 Aug 1999 09:34:45 -0500 (CDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32619-1999.08.02-09.54.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm not sure of the exactly correct term for what I am interested in--
but let me try to describe:

Is there a technique for correcting GPS positions sometime later than
when they were actually measured and computed? I am calling this "post"-
correction due to my lack of knowlege of the correct terminology...

What I envision is a roving GPS receiver that is logging neccessary acquired
GPS data (carrier phase?, satellites used in computation?, etc?) but is not
able to receive DGPS signalling in real-time (for whatever reason). Sometime
in the future, the logged data from the rover is processed along with DGPS
(or other information) that was logged somewhere else so that SA and other
anomalies can be corrected out after the fact...

If this technique already exists, I'd appreciate some pointers on where
I might learn more about it...

If it doesn't exist, I'd appreciate comments on how one might
accomplish it... mostly, I'm interested in what data would have to be logged
by the rover and the fixed station so that all of the neccessary variables
would be there for the post-computations.

Thanks.

Chris
--

Chris Elmquist, N0JCF
chrise@n0jcf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: -- DGPS

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Mon, 2 Aug 1999 11:01:24 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32621-1999.08.02-10.09.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> Very well said Dave.
>
> There are two different methods of Differential GPS, 1) Pseudo Range and 2)
> Carrier Phase. It is number 1) that the Oncore VP does. The pseudo range
> and pseudo range rate errors are outputted in the Motorola Binary Format and
> the DGPSIB reformats that into the RTCM SC-104 format that many commercial
> GPS receviers understand.
>
> Carrier Phase is a much different animal and more difficult to do. The
> exercise is left to the student :-).
>
> There are very good books on DGPS. I recommend the "Red" books published by
> ION.
...

Do you have an ISBN and/or title and/or ordering info?

So, when we get down to the nitty gritty, what we need to do what the
Oncore VP does is:

1 -- We need the "navigation" data so we can find out where the
     satellite really is.

2 -- We need to know where we really are -- which we can get by
     averaging GPS positions over a long enough time.

3 -- We need the measured pseudo range so we can have the "measured"
     distance to our position.

Based on one and two (above), we can compute the actual pseudo ranges.
That, together with three (above), will enable us to compute the
pseudo range errors. I assume the pseudo range rates and their errors
can be computed in the same fashion.

"Sam's GPS Software Pages"
    http://callisto.worldonline.nl/~samsvl/software.htm
contain sample code to do most of what we need (I hope).

It isn't exactly rocket science. Well, actually, it is, but that
shouldn't be a problem.

If I take one of the obsolete 486 machines I have around the shop and
put Linux on it I would think that it should be able do this job.

Any thoughts or comments?

Ken

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] Re: Post correction DGPS?

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Mon, 2 Aug 1999 11:04:04 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32622-1999.08.02-10.11.55--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I'm not sure of the exactly correct term for what I am interested in--
> but let me try to describe:
>
> Is there a technique for correcting GPS positions sometime later than
> when they were actually measured and computed? I am calling this "post"-
> correction due to my lack of knowlege of the correct terminology...
>
> What I envision is a roving GPS receiver that is logging neccessary acquired
> GPS data (carrier phase?, satellites used in computation?, etc?) but is not
> able to receive DGPS signalling in real-time (for whatever reason). Sometime
> in the future, the logged data from the rover is processed along with DGPS
> (or other information) that was logged somewhere else so that SA and other
> anomalies can be corrected out after the fact...
>
> If this technique already exists, I'd appreciate some pointers on where
> I might learn more about it...
>
> If it doesn't exist, I'd appreciate comments on how one might
> accomplish it... mostly, I'm interested in what data would have to be logged
> by the rover and the fixed station so that all of the neccessary variables
> would be there for the post-computations.
>
> Thanks.
>
> Chris
> --
> Chris Elmquist, N0JCF
> chrise@n0jcf.com

The short answer is YES.

See:

Sam's GPS Software Pages
    http://callisto.worldonline.nl/~samsvl/software.htm

Ken

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: -- DGPS

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 2 Aug 1999 15:16:17 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32650-1999.08.02-14.26.48--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, August 02, 1999 11:01 AM
Subject: [tacgps] Re: -- DGPS

> >
> > Very well said Dave.
> >
> > There are two different methods of Differential GPS, 1) Pseudo Range and
2)
> > Carrier Phase. It is number 1) that the Oncore VP does. The pseudo
range
> > and pseudo range rate errors are outputted in the Motorola Binary Format
and
> > the DGPSIB reformats that into the RTCM SC-104 format that many

commercial
> > GPS receviers understand.
> >
> > Carrier Phase is a much different animal and more difficult to do. The
> > exercise is left to the student :-).
> >
> > There are very good books on DGPS. I recommend the "Red" books
published by
> > ION.
> ...
>
> Do you have an ISBN and/or title and/or ordering info?

Take a look at

   http://www.navtechgps.com/supply/books.asp?Line=differential

> So, when we get down to the nitty gritty, what we need to do what the
> Oncore VP does is:
>
> 1 -- We need the "navigation" data so we can find out where the
>   satellite really is.
>
> 2 -- We need to know where we really are -- which we can get by
>   averaging GPS positions over a long enough time.
>
> 3 -- We need the measured pseudo range so we can have the "measured"
>   distance to our position.
>
> Based on one and two (above), we can compute the actual pseudo ranges.
> That, together with three (above), will enable us to compute the
> pseudo range errors. I assume the pseudo range rates and their errors
> can be computed in the same fashion.
>
> "Sam's GPS Software Pages"
>   http://callisto.worldonline.nl/~samsvl/software.htm
> contain sample code to do most of what we need (I hope).
>
> It isn't exactly rocket science. Well, actually, it is, but that
> shouldn't be a problem.

I love this. It's only software. It should be easy! :-)

> If I take one of the obsolete 486 machines I have around the shop and
> put Linux on it I would think that it should be able do this job.
>
> Any thoughts or comments?

Ken, please study the problem and report back to the list the feasibility of
doing all of the above.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Re: -- DGPS

From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
Date: Mon, 2 Aug 1999 16:05:15 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32658-1999.08.02-15.12.48--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
>
> ----- Original Message -----
> From: Kenneth Lerman <Kenneth.Lerman@lerman.nai.net>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Monday, August 02, 1999 11:01 AM
> Subject: [tacgps] Re: -- DGPS
>
>
> > >

> > > Very well said Dave.
> > >
> > > There are two different methods of Differential GPS, 1) Pseudo Range and
> 2)
> > > Carrier Phase. It is number 1) that the Oncore VP does. The pseudo
> range
> > > and pseudo range rate errors are outputted in the Motorola Binary Format
> and
> > > the DGPSIB reformats that into the RTCM SC-104 format that many
> commercial
> > > GPS receviers understand.
> > >
> > > Carrier Phase is a much different animal and more difficult to do. The
> > > exercise is left to the student :-).
> > >
> > > There are very good books on DGPS. I recommend the "Red" books
> published by
> > > ION.
> > ...
> >
> > Do you have an ISBN and/or title and/or ordering info?
>
> Take a look at
>
>   http://www.navtechgps.com/supply/books.asp?Line=differential
>
>
> > So, when we get down to the nitty gritty, what we need to do what the
> > Oncore VP does is:
> >
> > 1 -- We need the "navigation" data so we can find out where the
> >   satellite really is.
> >
> > 2 -- We need to know where we really are -- which we can get by
> >   averaging GPS positions over a long enough time.
> >
> > 3 -- We need the measured pseudo range so we can have the "measured"
> >   distance to our position.
> >
> > Based on one and two (above), we can compute the actual pseudo ranges.
> > That, together with three (above), will enable us to compute the
> > pseudo range errors. I assume the pseudo range rates and their errors
> > can be computed in the same fashion.
> >
> > "Sam's GPS Software Pages"
> >   http://callisto.worldonline.nl/~samsvl/software.htm
> > contain sample code to do most of what we need (I hope).
> >
> > It isn't exactly rocket science. Well, actually, it is, but that
> > shouldn't be a problem.
>
> I love this. It's only software. It should be easy! :-)

That's a fair enough comment. And since I write software for a living,
I should know better.

But it is software that has been done many times before. And I'm sure
that it is reasonably easy for the right person.

>
>
> > If I take one of the obsolete 486 machines I have around the shop and
> > put Linux on it I would think that it should be able do this job.
> >
> > Any thoughts or comments?
>
> Ken, please study the problem and report back to the list the feasibility of
> doing all of the above.
>

Studying the problem is what I've been doing by interacting with the list.
I guess I had hoped that someone would write:
  "I've used Sam's code and it looks like it should do the job except that
   you would have to XYZ instead of ABC."

Or maybe someone would write:
  "Sam's code is overly simplistic. It is the 20% of the code which
   solves 80% of the problem. Someone will have to implement the remaining
   80% of the code."

It's clearly feasible from an engineering standpoint (although not
necessarily feasible by me.) Is it feasible from an economic
standpoint? I can't even begin to estimate the effort involved since
I have insufficient experience in this problem. And estimating
software development is difficult even in familiar domains.

I would think (I'd write assume, but someone would probably make the
usual comment about the word) that the problem is significantly easier
to solve using a workstation than it is on a 2" by 3" board. At least
in terms of avoiding the need for clever algorithms.

I was hoping that my thoughts might dispell some of the gloom I've
sensed about the future of inexpensive amateur DGPS. Perhaps I've
been overly optimistic (and not just on the technical side).

Regards,

Ken

--
Kenneth Lerman   Kenneth.Lerman@lerman.nai.net
Systems Essentials Limited   Fax: (203)426-9138
55 Main Street   Voice: (203)426-4430
Newtown, CT 06470   http://w3.nai.net/~lerman
PGP fingerprint = B1 66 29 FB CB 8C 6A 24 E1 DF B4 63 2C D6 5D AD

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Re: Post correction DGPS?

From: chrise@n0jcf.com (Chris Elmquist)
Date: Mon, 2 Aug 1999 15:20:00 -0500 (CDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32663-1999.08.02-15.40.04--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kenneth Lerman wrote:
>
> The short answer is YES.
>
> See:
>
> Sam's GPS Software Pages
>   http://callisto.worldonline.nl/~samsvl/software.htm

Thanks for the pointer. I'll study further.

Chris
--
Chris Elmquist, N0JCF
chrise@n0jcf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Fw: Help for teachers group

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 3 Aug 1999 08:36:49 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: <jaltounji@earthlink.net>
Message-ID: <LYR6754-32770-1999.08.03-07.49.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm passing this to the TACGPS list. Can someone on the list contact John
below and lend some assistance?

- Steve

----- Original Message -----
> Name: John Altounji
> Callsign:
> Email: jaltounji@earthlink.net
>
> Address: 13722 Sylvan St.

>
> City: Valley Glen, CA 91401 USA
>
>
> ---Comments--
> Can someone help our physics teachers group (LAPTAG)? We need to learn
how
> we can have a time stamp called from a MS C++ program.
>
> We are looking for a millisecond precision which the TAC should be able to
> deliver. Sychronizing the PC clock is not satisfactory.
>
> Thak you for your help.
> --

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Motorola MMC2003 has @@Bh

From: Brooke Clarke <brooke@pacific.net>
Date: Tue, 03 Aug 1999 19:01:38 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32862-1999.08.03-21.10.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello:

Motorola is now introducing the M12 receiver and in a year will discontinue the
VP.   This receiver is aimed at the big dollar accounts and will not support the
timing and DGPS applications. Maybe in a year or so they will be added.

They have had a chip set available but it was for extremely high volume users
and is very expensive to get started. Now they are offering a standardized chip
set that may be very reasonably priced.

The MGPSCS-A1 consists of the PSRF1111A which is the RF module and the MMC2003
which takes the 4.092 MHz digital data stream from the PSRF1111 and does the 12
channel GPS stuff. Note that the MMC2003 is a special version of the MMC2001
combined DSP and microprocessor. The manual for these chips is on the Motorola
site at:

http://www.mot.com/SPS/MCORE/gps/index.html

Scroll to Downloads and save the 6.6 MB MC2003 Reference manual as a ZIP file
then expand it.

Table C-8 lists the @@ commands and among them is @@Bh but now it is a 12
channel command. Art will be carrying these parts when they are available at:

 http://www.synergy-gps.com/

in addition they will be carrying the evaluation board at a slight discount.
The eval kit is made by Axiom Manufacturing at:

http://www.axman.com/cmd2003.htm

73,

Brooke Clarke
N6GCE -Good Computer Engineer
http://www.pacific.net/~brooke/MMC2003.html

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] Re: Sv: Re: End of VP Oncore

From: "Henk Uijterwaal (RIPE-NCC)" <henk@ripe.net>
Date: Wed, 4 Aug 1999 09:47:01 +0200 (CEST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32900-1999.08.04-02.56.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Wed, 28 Jul 1999, Kurt Poulsen wrote:

> There is another source for GPS receiver which outputs RTCM SC-104, and
> which is said to be low cost whatever that is. It is the ALLSTAR from
> Canadian Marconi.

> Can any of You tell me the price as the danish distributor does not
> respond to my enquiry, and are probably "profit hungry".

These units are in the NavTech GPS (http://www.navtechgps.com) catalog.

The Allstar units range from $175 to $1995, depending on the features that
you want on the board. There is also the Superstar board for $141.
Besides CMC format, the boards also do NMEA output.

Development kits (Allstar/Superstar, interface, enclosure, cables, antenna
and W95 monitor program) range from $650 to $2495.

BTW. Has anybody on this list ever used these units for timing purposes?
Would it be possible to interface them to the TAC?

Henk

Henk Uijterwaal   Email: henk.uijterwaal@ripe.net
RIPE Network Coordination Centre   WWW: http://www.ripe.net/home/henk
Singel 258   Phone: +31.20.535-4414, Fax -4445
1016 AB Amsterdam   Home: +31.20.4195305
The Netherlands   Mobile: +31.6.55861746

The Committee (...) was unable to reach a consensus that substantial merit was
lacking. Thus, the appeal was deemed meritorious.   (Orlando NABC #19).

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Re: Sv: Re: End of VP Oncore

From: "Doug McKinney" <buoy@redshift.com>

Date: Wed, 4 Aug 1999 08:21:34 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32928-1999.08.04-10.39.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Henk Uijterwaal (RIPE-NCC) <henk@ripe.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Wednesday, August 04, 1999 12:47 AM
Subject: [tacgps] Re: Sv: Re: End of VP Oncore

> On Wed, 28 Jul 1999, Kurt Poulsen wrote:
>
> > There is another source for GPS receiver which outputs RTCM SC-104, and
> > which is said to be low cost whatever that is. It is the ALLSTAR from
> > Canadian Marconi.
>
>
I could not find a RTCMSC-104 output, but it dose have integrate carrier
phase output. The carrier phase output usually means raw data and not the
processed data you are looking for in the RTCMSC-104. The Motorola VP
ONCORE has DGPS output in Motorola Binary Format and is converted to the
RTCM fromat by TAPR's DGPSIB. The Motorola also has carrier phase output
which is independed and not required for the DGPS output. So, look over the
Canadian Marconi GPS and ask them these questions and email their response
to this group!

> > Can any of You tell me the price as the danish distributor does not
> > respond to my enquiry, and are probably "profit hungry".
>
> These units are in the NavTech GPS (http://www.navtechgps.com) catalog.
>
> The Allstar units range from $175 to $1995, depending on the features that

> you want on the board. There is also the Superstar board for $141.
> Besides CMC format, the boards also do NMEA output.
>
> Development kits (Allstar/Superstar, interface, enclosure, cables, antenna
> and W95 monitor program) range from $650 to $2495.
>
>
> BTW. Has anybody on this list ever used these units for timing purposes?
> Would it be possible to interface them to the TAC?
>

Yes it is possible, the 1pps timing accuracy is defined, but the 1pps pulse
width was not defined. The TAC2 has pulse streachers for short pulse widths

> Henk
>
> ---

> Henk Uijterwaal   Email: henk.uijterwaal@ripe.net
> RIPE Network Coordination Centre   WWW: http://www.ripe.net/home/henk
> Singel 258   Phone: +31.20.535-4414, Fax -4445
> 1016 AB Amsterdam   Home: +31.20.4195305
> The Netherlands   Mobile: +31.6.55861746
> ---

>
> The Committee (...) was unable to reach a consensus that substantial merit
was
> lacking. Thus, the appeal was deemed meritorious.   (Orlando NABC
#19).
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] RE: Doug: End of VP Oncore

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Wed, 4 Aug 1999 15:37:31 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-32954-1999.08.04-14.55.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
        Kurt is right. There is one version of the AllStar from CMC that will
do RTCM output straight out of the box. It is the AllStar DGPS Base
Station. (A fancy way of saying an AllStar with different software).
It will do the same as a standard AllStar but with direct RTCM output
added.

        The manual for it IS on the site. It is a completely different
document than the standard AllStars. List price is ~2000$US in single
quantities. Refer to the price list I posted earlier for more info.

                        Martin VE2MRX
[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Doug McKinney
Sent: Wednesday, August 04, 1999 10:22
To: TAPR Special Interest Group
Subject: [tacgps] Re: Sv: Re: End of VP Oncore

> On Wed, 28 Jul 1999, Kurt Poulsen wrote:
>
> > There is another source for GPS receiver which outputs RTCM
SC-104, and
> > which is said to be low cost whatever that is. It is the ALLSTAR
from
> > Canadian Marconi.
>
>
I could not find a RTCMSC-104 output, but it dose have integrate
carrier
phase output. The carrier phase output usually means raw data and not
the
processed data you are looking for in the RTCMSC-104. The Motorola VP
ONCORE has DGPS output in Motorola Binary Format and is converted to
the
RTCM fromat by TAPR's DGPSIB. The Motorola also has carrier phase
output
which is independed and not required for the DGPS output. So, look
over the
Canadian Marconi GPS and ask them these questions and email their
response
to this group!

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] M to include the binary differential correction in M12

From: Brooke Clarke <brooke@pacific.net>
Date: Thu, 05 Aug 1999 20:52:49 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33109-1999.08.05-23.01.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is some good news.

Also see my page on the PSRF1111A & MMC2003 at:
http://www.pacific.net/~brooke/MMC2003.html

73,

Brooke

-------- Original Message --------
Subject: Re: Demise of VP
Date: Thu, 5 Aug 1999 08:58:44 -8
From: synergy@adnc.com
Reply-To: tech@synergy-gps.com
Organization: Synergy Systems, LLC
To: brooke@pacific.net

Brooke,

Your desires have been heard by Motorola. Due to popular demand
they have decided to include the binary differential correction
message in the M12.

Randy Warner
Applications Engineer

Date sent: Sat, 31 Jul 1999 13:05:02 -0700
From: Brooke Clarke <brooke@pacific.net>
Send reply to: brooke@pacific.net
To: info@synergy-gps.com
Subject: Demise of VP

> Hello Art:
>
> I hope Motorola will consider offering the M12 with an option to
> duplicate the features of the VP.
>
> Although Motorola was correct in their idea for the VP that 8 channels
> would receiver a very large percentage of the satellites overhead, the
> problem is that it will ignore a satellite that has very good DOP because
> it has already locked to another. The 12 channel receiver will fix this

> problem.
>
> Please ask Motorola to offer a 12 channel version of the VP!
>
> Thanks,
>
> Brooke Clarke
> Rack and Stack Systems
> tel (800) 700-TEST
> fax (707) IO2-IEEE
> brooke@pacific.net
>
>

Synergy Systems, LLC P.O. Box 262250, San Diego, CA 92196
Voice (858) 566-0666 Toll Free 888 479-6749
  Fax (858) 566-0768 Web Site http://www.synergy-gps.com
 lat N 32 54' 51.802 Lon W 117 06' 44.048
Motorola's leading ONCORE GPS Distributor in the Americas

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] DigiKey (DAK) GPS Antenna Experience

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Fri, 6 Aug 1999 17:43:41 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33137-1999.08.06-02.52.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

G'Day,

A few weeks ago I saw a pointer to a DIGIKEY GPS PATCH ANTENNA on one of the
TAPR mailing lists. I decided to order a few at the price of US$17.33 +
Postage (A$30 approx.). You can order the Antennas online at
HTTP://www.digikey.com and search for part TK5150-ND.

After I ordered it I got an email asking what my application was, and if I
intended to re-export it. The correct answer was that I was using it for a
GPS antenna, and I did not intend to re-export it. The fun answer would have
been to say "I intend to use it as part of the guidance system of a bomb
that I am building, and I only intend to export it when I start my personal
war against New Zealand"

The patch antenna is about an 30mm square, and about 5mm thick. It is small
containing a high Er dielectric. According to the documentation you need to
add a radome to the antenna for protection from the weather, and also to
pull the frequency down by 5 MHz. No details are given on the sort of
RADOME, or the dielectric constant of the material. I decided to first try
the antenna without the radome, but with a MAR-6 MMIC Amplifier.

This worked well, although the performance seemed to be a bit degraded - I
guess that could be fixed with an ERA-3 MMIC and replacing the RG-174 with
something with slightly less loss.

OK - Next is to place the antenna into some sort of container. I got the end
cap for a 60mm plastic sewer pipe, and applied petrolium Jelly (Vaselene) to
the inside. Then I got some FIBREGLASS RESIN and placed about 5mm at the
bottom and allowed it to set. When it set, I removed the resin, relined the
cap and put the set resin back. I then put about 10mm more resin in the cap
and waited for a little while. When the resin had cured a little, I placed
the PATCH ANTENNA into the resin, as far down as it would go, and allowed it
to set.

When it set, I removed it and tested it. The performance was good, but could
have been better as noted above. But for the size and cost it is good.

If you have any questions please email me and I will attempt to answer them.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] Re: DigiKey (DAK) GPS Antenna Experience

From: "Doug McKinney" <buoy@redshift.com>
Date: Fri, 6 Aug 1999 04:47:45 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33147-1999.08.06-07.05.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Darryl Smith <vk2tds@ozemail.com.au>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Friday, August 06, 1999 12:43 AM
Subject: [tacgps] DigiKey (DAK) GPS Antenna Experience

> G'Day,

I purchased the same patch antenna from DK. This antenna is identical to
the patch antenna used in the Garmin 12 (even to the color of the ceramic).
The DK antenna does not have the 2" ground plane soldered on the back of the
antenna as in the Garmin 12. You will find that the 2"ground plane will
improve your antenna preformance.
73's
Doug

>
> A few weeks ago I saw a pointer to a DIGIKEY GPS PATCH ANTENNA on one of
the
> TAPR mailing lists. I decided to order a few at the price of US$17.33 +
> Postage (A$30 approx.). You can order the Antennas online at
> HTTP://www.digikey.com and search for part TK5150-ND.
>
> After I ordered it I got an email asking what my application was, and if I
> intended to re-export it. The correct answer was that I was using it for a
> GPS antenna, and I did not intend to re-export it. The fun answer would
have
> been to say "I intend to use it as part of the guidance system of a bomb
> that I am building, and I only intend to export it when I start my
personal
> war against New Zealand"
>
> The patch antenna is about an 30mm square, and about 5mm thick. It is
small
> containing a high Er dielectric. According to the documentation you need
to
> add a radome to the antenna for protection from the weather, and also to
> pull the frequency down by 5 MHz. No details are given on the sort of
> RADOME, or the dielectric constant of the material. I decided to first try
> the antenna without the radome, but with a MAR-6 MMIC Amplifier.
>
> This worked well, although the performance seemed to be a bit degraded - I
> guess that could be fixed with an ERA-3 MMIC and replacing the RG-174 with
> something with slightly less loss.
>
> OK - Next is to place the antenna into some sort of container. I got the
end
> cap for a 60mm plastic sewer pipe, and applied petrolium Jelly (Vaselene)
to
> the inside. Then I got some FIBREGLASS RESIN and placed about 5mm at the
> bottom and allowed it to set. When it set, I removed the resin, relined
the
> cap and put the set resin back. I then put about 10mm more resin in the
cap
> and waited for a little while. When the resin had cured a little, I placed
> the PATCH ANTENNA into the resin, as far down as it would go, and allowed
it
> to set.
>
> When it set, I removed it and tested it. The performance was good, but
could
> have been better as noted above. But for the size and cost it is good.
>
> If you have any questions please email me and I will attempt to answer
them.
>
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: DigiKey (DAK) GPS Antenna Experience

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Fri, 6 Aug 1999 22:45:04 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33188-1999.08.06-22.54.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You could always try the yogurt or margarine containers ... I remember Tom
constructing a quick helix from a yogurt container on an airplane once. He
did get a few stares from the flight attendants.

G
----- Original Message -----
From: Darryl Smith <vk2tds@ozemail.com.au>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Friday, August 06, 1999 2:43 AM
Subject: [tacgps] DigiKey (DAK) GPS Antenna Experience

> G'Day,
>
> A few weeks ago I saw a pointer to a DIGIKEY GPS PATCH ANTENNA on one of
the
> TAPR mailing lists. I decided to order a few at the price of US$17.33 +
> Postage (A$30 approx.). You can order the Antennas online at
> HTTP://www.digikey.com and search for part TK5150-ND.
>
> After I ordered it I got an email asking what my application was, and if I
> intended to re-export it. The correct answer was that I was using it for a
> GPS antenna, and I did not intend to re-export it. The fun answer would
have
> been to say "I intend to use it as part of the guidance system of a bomb
> that I am building, and I only intend to export it when I start my
personal
> war against New Zealand"
>
> The patch antenna is about an 30mm square, and about 5mm thick. It is
small
> containing a high Er dielectric. According to the documentation you need
to
> add a radome to the antenna for protection from the weather, and also to
> pull the frequency down by 5 MHz. No details are given on the sort of
> RADOME, or the dielectric constant of the material. I decided to first try
> the antenna without the radome, but with a MAR-6 MMIC Amplifier.
>
> This worked well, although the performance seemed to be a bit degraded - I
> guess that could be fixed with an ERA-3 MMIC and replacing the RG-174 with
> something with slightly less loss.
>
> OK - Next is to place the antenna into some sort of container. I got the
end
> cap for a 60mm plastic sewer pipe, and applied petrolium Jelly (Vaselene)
to
> the inside. Then I got some FIBREGLASS RESIN and placed about 5mm at the
> bottom and allowed it to set. When it set, I removed the resin, relined
the
> cap and put the set resin back. I then put about 10mm more resin in the
cap
> and waited for a little while. When the resin had cured a little, I placed
> the PATCH ANTENNA into the resin, as far down as it would go, and allowed
it
> to set.
>
> When it set, I removed it and tested it. The performance was good, but
could
> have been better as noted above. But for the size and cost it is good.
>
> If you have any questions please email me and I will attempt to answer
them.
>
>
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET

> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Garmin 175 help

From: Bryan Mumford <bryan@bmumford.com>
Date: Sat, 7 Aug 1999 23:38:39 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33297-1999.08.08-01.48.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm trying to see NMEA data out of a Garmin 175. I hooked up the
Garmin data cable to HyperTerminal and told the Garmin to enable NMEA
OUT from the setup menu, but no data seems to come into the PC serial
port. Does anyone know if there's more to it than that?

Bryan Mumford
Santa Barbara, California
http://www.bmumford.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] RS-232 cable in TAC-2 kit

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Tue, 10 Aug 1999 09:52:48 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33618-1999.08.10-12.03.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is the RS-232 cable included in the TAC-2 kit the same as the cable used in
older PC's to connect to the motherboard? I'd like to start using the
second serial port from the board but I only have the one cable.

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Re: RS-232 cable in TAC-2 kit

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 10 Aug 1999 13:33:11 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33620-1999.08.10-12.45.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Michael,

That depends. I've seen two different pinouts used for the RS-232 cables in
PCs. You can try it and see if it works. The pinouts are one-for-one from
the 2x5 header to the IDC DB9 connector.

- Steve

----- Original Message -----
From: Michael St. Laurent <rowl@earthcorp.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Tuesday, August 10, 1999 12:52 PM
Subject: [tacgps] RS-232 cable in TAC-2 kit

> Is the RS-232 cable included in the TAC-2 kit the same as the cable used
in
> older PC's to connect to the motherboard? I'd like to start using the
> second serial port from the board but I only have the one cable.
>

> --------------------
> Michael St. Laurent
> Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Dual band UHF and L-band antenna system

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 10 Aug 1999 18:35:43 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: mattypie@relgyro.Stanford.EDU
Message-ID: <LYR6754-33645-1999.08.10-17.44.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can someone on the list helps these guys out?

- Steve

>Hi,
>
>My name is Matthew Rabinowitz. I am a PhD student in Electrical Engineering
>at Stanford University, in the GPS navigation and control group of Brad
>Parkinson (original GPS program manager). We have developed a
>centimeter-level satellite navigation system which combines Low Earth Orbit
>Satellite signals with those of GPS satellites. The system has been designed,
>built and verified. We are proceeding to make it robust and marketable. We
>require antennas (preferably patch, but open to suggestions...) which are
>resonant at both 400.1 MHz (with bandwidth of .1 to 5%) and 1.57542GHz (with
>bandwidth of .3 to 3%). The antennas need to track satellites above 5degress,
>and in addition, the phase centers should be as stable as possible. Lastly we
>need phase centers at 1.575Gz and 400.1Mhz which are as close together as
>possible.
>
>My experience suggests this can be done with a dual feed circularly polarized
>antenna, with the feeds feeding adjacent sides of a square patch, and the
>feeds with a relative phase delay of lamda/4... Two such antennas (one at
>UHF, one at L band) can be stacked on top of each other. Of course we're
>completely open to better approaches.
>
>Please let me know if a customized antenna to suite our needs is feasible. If
>not, perhaps you might suggest other resources. We may have to settle for two
>separate antennas - one L-band and one UHF. If we go for this option, can
>your organization help us?
>
>Regards,
>Matt
>
>
>Matthew Rabinowitz
>Stanford University, Dept. of Electrical Engineering
>(650) 723-1498 (w)
>(650) 917-0372 (h)
>
>"... chemists always believe they're smarter than biochemists. Of course,
>physicists believe they're smarter than chemists, mathematicians believe
>they're smarter than physicists, and, for a while, philosophers thought
>they were smarter than mathematicians, until they found out in this century
>that they really didn't have anything much to talk about."
>
>
>
>
- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

24. [tacgps] Re: Building TAC-2 RS232 cable

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Tue, 10 Aug 1999 22:48:39 -0500

To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33687-1999.08.10-22.58.10--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Michael,

Your PC cable probably has a male DB-9 (the standard configuration from
motherboard 2 x 5 header to DB-9 computer case cutout. I believe the TAC-2
came with a female DB-9 connector, which I prefer to use. It is easier to
find 9 pin serial extension cables at your local radio shack, then other
configurations (M <-> M or F <-> F).

If you wish to use the PC cable you have, just check (visual or with DVM)
if pin1 on the DB-9 connects to pin 1 on the 2 x 5 socket connector
 usually an arrow).

Page 148 of Mouser Electronics' August catalog (#599) has all the connectors
(3M) you would need. Write back if you need a specific parts list and
instructions on how to build your won These cables are easy to build with
minimal tools (Scissors and small hobby vise).

G. Beat

----- Original Message -----
From: Michael St. Laurent <rowl@earthcorp.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Tuesday, August 10, 1999 11:52 AM
Subject: [tacgps] RS-232 cable in TAC-2 kit

> Is the RS-232 cable included in the TAC-2 kit the same as the cable used
in
> older PC's to connect to the motherboard? I'd like to start using the
> second serial port from the board but I only have the one cable.
>
> --------------------
> Michael St. Laurent
> Hartwell Corporation
>
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] Looking for a CT-5 Connector

From: Rosenberg.Eric@orbcomm.com
Date: Thu, 12 Aug 1999 09:33:48 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-33899-1999.08.12-08.47.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm looking for a source of Panasonic CT-5 connectors...the ones that they use
on their GPS antennas.

Any thoughts?

Eric W3DQ
rosenberg.eric@orbcomm.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] Flagstaff DGPS

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Wed, 18 Aug 1999 18:10:25 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-34984-1999.08.18-17.20.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

While on 2 week Family Camping trip, the only APRS signal I heard in
Northern Arizona was a 10 second DGPS signal using the default call of

PK232>DGPS:.....rtcm data........

It appeared to be strongest south of the city with a range of say 10 miles
or so... A home station maybe...

Too bad there was no local APRS network, digis, or any other users
anywhere within 100 or more miles... THe 10,000 foot nearby Mountain
would cover the whole state! All the way to Grand Canyon...

As it is, all APRS activity is in south Arizona near Phoenix....

Nothing for the 22,000 visitors a day to Grand Canyon for example...

de WB4APR, Bob

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] GPS III+ and KPC-3

From: Steve Meserve <stevenme@MICROSOFT.com>
Date: Wed, 18 Aug 1999 23:33:56 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35058-1999.08.19-01.44.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What's the easiest way to use a KPC3 Plus and a GPS 3+ for APRS, to send a
full aprs packet including icon, status text, etc, in addition to the
lat/long from the gps? Thanks,

Steve

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Re: GPS III+ and KPC-3

From: Robert Winingham <kc5ejk@onramp.net>
Date: Thu, 19 Aug 1999 11:00:34 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35098-1999.08.19-11.09.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>What's the easiest way to use a KPC3 Plus and a GPS 3+ for APRS, to send a
>full aprs packet including icon, status text, etc, in addition to the
>lat/long from the gps? Thanks,

http://www.dididahdahdidit.com/

This is a must visit site and has lots of links to step by step settings for the
KPC-3 Plus .

A GPS and a TNC /radio is call a standalone tracker.

other TAPR GPS/APRS lists to join or read SEARCHABLE archives at www.tapr.org

htaprs@lists.tapr.org
aprssig@lists.tapr.org

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] GPS Rolover Web Site

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Fri, 20 Aug 1999 21:50:07 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

Message-ID: <LYR6754-35318-1999.08.20-21.03.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For anyone seeking information on the "potential" problems this
Saturday you can take a look here. This will be interesting to see..

http://www.navcen.uscg.mil/gps/geninfo/y2k/gpsweek.htm

Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] Rollover and Question on Week Rollover...

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Sun, 22 Aug 1999 15:09:33 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35515-1999.08.22-00.20.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

G'Day...

The GPS rollover occoured at 10:00 AM Sunday Morning Sydney time, and all my
GPS gear seems to have coped well. I had a UT+ Oncore plugged into TAC32 and
managed to get a screen dump at the exact rollover time....

The one thing I noticed was that the GPS week did not rollover until
00:00:00 UTC. I was under the impression that the GPS week should have
rolled over at 23:59:47, since the GPS Week is related to GPS Time, GPS + 13
Seconds (at the moment) is identical to UTC...

Darryl Vk2TDS, Sydney Australia

Darryl Smith, VK2TDS   POBox 169 Ingleburn NSW 2565 Australia
Mobile Number 0412 929 634 [+61 4 12 929 634 International]

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Steve Sampson" <ssampson@www.usa-site.net>
Date: Sun, 22 Aug 1999 02:52:05 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35520-1999.08.22-03.02.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm shocked! You mean the power-grid didn't fail, the water pumps didn't
fail, and all those weapons people bought weren't necessary? :-)

-----Original Message-----

>G'Day...
>
>The GPS rollover occoured at 10:00 AM Sunday Morning Sydney time, and all
my
>GPS gear seems to have coped well. I had a UT+ Oncore plugged into TAC32
and
>managed to get a screen dump at the exact rollover time....

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Eric A. Cottrell" <eac@shore.net>
Date: Sun, 22 Aug 1999 11:29:52 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35560-1999.08.22-11.39.13--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Sampson wrote:
>
> I'm shocked! You mean the power-grid didn't fail, the water pumps didn't
> fail, and all those weapons people bought weren't necessary? :-)

Hello,

You got that wrong. That is what is going to happen next January onward.

This is the one where all the small European airliners fall out of the sky or
crash into other objects. Also all the small boaters get lost in the fog,
and all the ones that did not crash into rocks or other boats drift out to
sea.

I am doing my part for the Y2K problem by selling Y2K-complaint 555 and 556
timer chips. I have gotten the message out and sales have been brisk.

BTW for all you Hams involved in Emergency Work. It is expected that if
everything is okay after next January that a vast number of used AC Generators
will come on the used market.

73 Eric eac@shore.net WB1HBU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

33. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Harry Burford" <hburford@airmail.net>
Date: Sun, 22 Aug 1999 14:53:18 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35585-1999.08.22-15.02.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Actually, it isn't that wrong.

I'm involved with the Y2K effort at work. I was anxious to see how the GPS
EOL went with people reaction especially in the event of a major outage.
This would be a good taste of what to expect in the event we get major
outages at Y2K. I know it is a completely different problem.

>From what I've seen of the buying frenzy, what is wrong is the statement
about the generators. If everything is OK after next January then there
will be a vast number of UNUSED generators making their way onto the used
market.

Harry, KAØTTY

----- Original Message -----
From: Eric A. Cottrell <eac@shore.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Sunday, August 22, 1999 11:29 AM
Subject: [tacgps] Re: Rollover and Question on Week Rollover...

| Steve Sampson wrote:
| >
| > I'm shocked! You mean the power-grid didn't fail, the water pumps
didn't
| > fail, and all those weapons people bought weren't necessary? :-)
|
| Hello,
|
| You got that wrong. That is what is going to happen next January onward.
|
| This is the one where all the small European airliners fall out of the sky
or
| crash into other objects. Also all the small boaters get lost in the fog,
| and all the ones that did not crash into rocks or other boats drift out to
| sea.
|
| I am doing my part for the Y2K problem by selling Y2K-complaint 555 and
556

| timer chips. I have gotten the message out and sales have been brisk.
|
| BTW for all you Hams involved in Emergency Work. It is expected that if
| everything is okay after next January that a vast number of used AC
Generators
| will come on the used market.
|
| 73 Eric eac@shore.net WB1HBU
|
| ---
| You are currently subscribed to tacgps as: HBURFORD@AIRMAIL.NET
| To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
|
|

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

34. [tacgps] 200+ Oncores No problem

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Sun, 22 Aug 1999 16:05:44 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35587-1999.08.22-15.18.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I kept an eye on 200+ Motorola Oncore GPS's for a few hours before
and after the "event". The Oncores are used in a crystal standard
that we use on our PCS sites and I can keep somewhat of an eye on all
of them via our network.

No glitches were noticed while looking at the entire S Florida
network on the computer.
Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] Re: 200+ Oncores No problem

From: "Art Neilson, KH7PZ" <art@hawaii.rr.com>
Date: Sun, 22 Aug 1999 12:02:52 -1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35599-1999.08.22-17.12.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How do you use the GPS with the crystal standard? I'm interested
in such a standard to calibrate my HP 5340A Freq counter to.

At 04:05 PM 08/22/1999 +0000, you wrote:
>I kept an eye on 200+ Motorola Oncore GPS's for a few hours before
>and after the "event". The Oncores are used in a crystal standard
>that we use on our PCS sites and I can keep somewhat of an eye on all
>of them via our network.
>
>No glitches were noticed while looking at the entire S Florida
>network on the computer.
>Richard F. Garcia
>k4gps@bellsouth.net Ex: N2CZF KA2FXA
>Jupiter Farms FL.
>http://www.aprs.net/florida
>http://www.primeco.com
>
>
>---
>You are currently subscribed to tacgps as: art@hawaii.rr.com
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
--
  __
 /)   _/_ It is a capital mistake to theorise before one has data.

```
 /--/ __  /    Insensibly one begins to twist facts to suit theories,
/  (_/ (_<__   Instead of theories to suit facts.
                    -- Sherlock Holmes, "A Scandal in Bohemia"
Arthur W. Neilson III, KH7PZ
Bank of Hawaii Tech Support
art@hawaii.rr.com


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

36. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Steve Sampson" <ssampson@www.usa-site.net>
Date: Sun, 22 Aug 1999 18:10:52 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35614-1999.08.22-18.20.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I bought my first generator this year after the tornado passed by
about two miles west of me. After listening to that beast and
thinking of how to redesign the muffler, I have come to the conclusion
that solar and wind power is the only way to go :-)

Steve
"noise is cheap, quiet is expensive"

-----Original Message-----

>From what I've seen of the buying frenzy, what is wrong is the statement
>about the generators. If everything is OK after next January then there
>will be a vast number of UNUSED generators making their way onto the used
>market.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] Re: Rollover and Question on Week Rollover...

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Sun, 22 Aug 1999 20:16:03 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35627-1999.08.22-19.26.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sun, 22 Aug 1999, Steve Sampson wrote:

> I bought my first generator this year after the tornado passed by
> about two miles west of me. After listening to that beast and
> thinking of how to redesign the muffler, I have come to the conclusion
> that solar and wind power is the only way to go :-)

Having studied solar for years, even todays lower prices work out to 100
years or more payback. But these never include replacing the batteirs
every 5 years. Thus, compared to 10 cent electricity, you can never even
break even...

But investing in the batteries and charging them at night on 2 cent
electricity and using them during the day when electricity is 17 cents is
a way of not only breaking even in 5 years, but also giving yourself as
much reserve battery capacity as you want. After a week of no AC, Then
fire up the Generator occassionally to recharge...

THis assumes you are on time-of-use metering which I think is federally
required for all new contsrtution since 1990. I am on it and boy do I
enjoy finding ways not to use juice during summer noons and then I can run
the AC and/or Heater all night for peanuts...

So far we average about 75% of our electricity use is at the 2 cent rate.

By the way there are 3 rates:

1) 2 cents all night and all day weekends and holidays
2) 6 cents for mornigns and evenings
3) 17 cents for 6 hours around noon and after

In winter it is:

1) 2 cents all night and all day weekends and holidays
2) 10 cents for mornings and evenings
3) 7 cents during mid day

de WB4APR, Bob

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Steve Sampson" <ssampson@www.usa-site.net>
Date: Sun, 22 Aug 1999 19:49:47 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35635-1999.08.22-19.59.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob Bruninga wrote:

>This assumes you are on time-of-use metering which I think is federally
>required for all new contsrtution since 1990. I am on it and boy do I
>enjoy finding ways not to use juice during summer noons and then I can run
>the AC and/or Heater all night for peanuts...

Do you have a special meter?

As far as I know (my home was built in 1997) Oklahoma still uses one rate.
According to my bill it is 7 cents with all taxes included.

Steve Sampson, K5OKC
Oklahoma City, OK

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

39. [tacgps] Re: Rollover and Question on Week Rollover...

From: Bob Bruninga <bruninga@nadn.navy.mil>
Date: Mon, 23 Aug 1999 09:08:47 -0400 (EDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35711-1999.08.23-08.18.54--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Sun, 22 Aug 1999, Steve Sampson wrote:

> Bob Bruninga wrote:
> >This assumes you are on time-of-use metering which I think is federally
> >required for all new contsrtution since 1990....
>
> Do you have a special meter?

Yes, and they charge you $10 per month to "rent" it! (normal bills
include about $4 per month for meter rental).   I wonder if you can buy
it?

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

40. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Ron L. Sparks" <spark51@ibm.net>
Date: Mon, 23 Aug 1999 10:07:57 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35727-1999.08.23-10.18.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I suspect you weren't really serious about redesigning the muffler, but just
in case... <grin>.

Typically the majority of the sound (70% or some such) comes from the engine

block itself. That's why generators for quiet areas, like hospitals are
enclosed in a sounddampened metal box. I have spent a lot of time
experimenting with them (I lived in Pakistan for several years and they were
a necessity). The best way to quiet one of the beasts without danger of
carbon monoxide or setting it or something else on fire is to build a three
sided cube of concrete block around it with the open side point away from
you (and hopefully your neighbors). If you put a roof on the cube, you may
have to put in some form of ventilation to keep the operating temperature in
the normal range.

Subjectively, they also seem to be quietest at a load of about 40-60%.

Couldn't resist,
Ron

-----Original Message-----
From: bounce-tacgps-5718@lists.tapr.org
[mailto:bounce-tacgps-5718@lists.tapr.org]On Behalf Of Steve Sampson
Sent: Sunday, August 22, 1999 6:11 PM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Rollover and Question on Week Rollover...

I bought my first generator this year after the tornado passed by
about two miles west of me. After listening to that beast and
thinking of how to redesign the muffler, I have come to the conclusion
that solar and wind power is the only way to go :-)

Steve
"noise is cheap, quiet is expensive"

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Tue, 24 Aug 1999 05:56:43 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35780-1999.08.23-15.07.03--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK...
        Firstly I should say that I work for one one the state owned generators in
NSW, Australia, and since I started the thread, I thought I needed to
reply....

> I'm shocked! You mean the power-grid didn't fail, the water pumps didn't
> fail, and all those weapons people bought weren't necessary? :-)

In a sister organisation they were doing an Audit of GPS for Y2K, and EOL.
The guys at one of the centers said they had the only GPS in the
organisation (of 1,000 people). They used it as a clock for their local
servers, and probably to keep the 50 Hz close to spec... Anyway an associate
thought that the surveyers also used GPS. The responce back was

        'Why in hell would surveyers use GPS?'

Anyway, since it looks as if I am on call, and want tons of overtime, I
guess I need to plan my own power outage here in Australia.... That should
not be too hard to do... 4 buttons within 500 meters of each other could
black out 1/3 of the state!!!! Where were you when the lights went out

> Having studied solar for years, even todays lower prices work out to 100
> years or more payback. But these never include replacing the batteirs
> every 5 years. Thus, compared to 10 cent electricity, you can never even
> break even...

With grid connected solar the prices are better... There are no batteries to
depreciate. The Olympic Village has about 1000 W of solar cells on each
house connected back into the grid... I do not know what the tarrifs are...
It also helps that our companies have solar cells with over 20% efficiency
(I think we have the world record)

NSW prices are
        A$0.13c regardless of time of day - This is less than US$0.10

A$0.04 for off peak hot water (they decided when you get power for hot water - but we never run out)

These are amongst the cheapest in the world for people who burn coal... (1% Hydroelectric. 0% Nuclear)

But they are the retail prices...

The spot price of electricity is between A$15 and $4,500 per MWatt Hour. Note that this price is on a futures-type market where the companies bid for how much they will generate at what price...

More imporantly, I was working at a power station about 3 years ago when I left uni (I am only 28). Anyway my boss there was proud that he has NEVER PAID AN ELECTRCITY BILL EVER!!!!

This is the head electrical engineer in the largest power station in the southern hemisphere....

He used to live for low rent in a house owned by the organisation which was exempt from electricity. Now he has solar only, and is not connected to the grid. He even runs his arc welder on solar...

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

42. [tacgps] Japanese Problems with GPS rollover

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Mon, 23 Aug 1999 19:47:14 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35835-1999.08.23-19.57.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TOKYO (Reuters) - A steady stream of irate customers called Japanese car navigation makers Sunday after their automotive directional devices failed due to a computer flaw.

The screens on some car navigation systems went blank while others froze up as a computer bug struck Global Positioning System (GPS) devices, electronics company Pioneer Electronic Corp said.

Pioneer, one of several car navigation system makers battling the bug, had received several hundred phone calls since the problem started at 9 a.m., a spokeswoman said.

About 450 Pioneer workers manned telephone lines and staffed service centers over the weekend to help customers with the GPS problem, she said.

Some 95,000 car navigation units sold in Japan may be unable to cope with an internal date change in the system, the Ministry of International Trade and Industry said.

Four Japanese manufacturers of GPS systems have completed updating only about 170,000 of the estimated 260,000 units sold in Japan since 1996 and believed to be still in operation.

Japanese drivers are heavily reliant on the navigational devices because most streets in urban centers such as Tokyo are unnamed and follow curving paths laid out among a tangle of property lines.

Japan's Maritime Safety Agency has received reports that ships with older GPS systems are in or near territorial waters but has not received any distress calls as of Sunday noon, a spokesman said.

At midnight GMT, the 24 satellites of the Global Positioning System, which provide navigational data from 11,000 miles out in space, switched their timing system back to zero.

The rollover is because the system, which uses radio signals from satellites to provide navigation data, was designed to ignore calendar dates but keep precise time measured in seconds and weeks.

Only 1,024 weeks were allotted from January 6, 1980, before the system is reset to zero.

43. [tacgps] Re: 200+ Oncores No problem

From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Mon, 23 Aug 1999 20:56:51 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35839-1999.08.23-20.10.17--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Art, that is well above my knowledge base. I just maintain the systems I don't do board level repairs. THey weay they teach us is that the GPS maintains the XO to tolerance but the XO is on standby at all times and the GPS maintains the Rubidium Osc (RB) which is our main timing standard. If the RB dies the timing and XO are maintained

by the GPS, if the GPS also dies the XO will maintain for about 4
hours and then will eventually drift, lose lock and the cell will go
down.

There is another person on the list that replied to me and it happens
to be the manufacturer of the product we use in our Lucent Cell
site. Hopefully he will reply to your post, FYI these units are well
into the $10K range so don't offer to buy one! <grin>

> Date: Sun, 22 Aug 1999 12:02:52 -1000
> To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
> From: "Art Neilson, KH7PZ" <art@hawaii.rr.com>
> Subject: [tacgps] Re: 200+ Oncores No problem
> Reply-to: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

> How do you use the GPS with the crystal standard? I'm interested
> in such a standard to calibrate my HP 5340A Freq counter to.
>
>
> At 04:05 PM 08/22/1999 +0000, you wrote:
> >I kept an eye on 200+ Motorola Oncore GPS's for a few hours before
> >and after the "event". The Oncores are used in a crystal standard
> >that we use on our PCS sites and I can keep somewhat of an eye on all
> >of them via our network.
> >
> >No glitches were noticed while looking at the entire S Florida
> >network on the computer.
> >Richard F. Garcia
> >k4gps@bellsouth.net Ex: N2CZF KA2FXA
> >Jupiter Farms FL.
> >http://www.aprs.net/florida
> >http://www.primeco.com
> >
> >
> >---
> >You are currently subscribed to tacgps as: art@hawaii.rr.com
> >To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
> >
> --
>   __
>   /)   _/_ It is a capital mistake to theorise before one has data.
> /--/ __ /   Insensibly one begins to twist facts to suit theories,
> / (_/ (_<__   Instead of theories to suit facts.
>   -- Sherlock Holmes, "A Scandal in Bohemia"
> Arthur W. Neilson III, KH7PZ
> Bank of Hawaii Tech Support
> art@hawaii.rr.com
>
>
> ---
> You are currently subscribed to tacgps as: K4GPS@BELLSOUTH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

44. [tacgps] Re: 200+ Oncores No problem

From: G Sanders <gsanders1@bigfoot.com>
Date: Mon, 23 Aug 1999 21:58:06 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35855-1999.08.23-21.08.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's another way to do it:

http://www.rt66.com/~shera/

I built one to stabilize the oscillator in my HP5328, and it
works well when compared with a WWVB comparitor receiver.
I use a Garmin 20, but the Oncore works considerably better,
I'm told.

The construction article appeared in the July 98 QST.

Gary WB0BZR

Richard Garcia wrote:
>
> Hi Art, that is well above my knowledge base. I just maintain the
> systems I don't do board level repairs. THey weay they teach us is
> that the GPS maintains the XO to tolerance but the XO is on standby
> at all times and the GPS maintains the Rubidium Osc (RB) which is our
> main timing standard. If the RB dies the timing and XO are maintained
> by the GPS, if the GPS also dies the XO will maintain for about 4
> hours and then will eventually drift, lose lock and the cell will go
> down.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

45. [tacgps] Re: Rollover and Question on Week Rollover...

From: "Harry Burford" <hburford@airmail.net>
Date: Mon, 23 Aug 1999 22:48:40 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-35865-1999.08.23-22.58.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

THANKYOU!

I've been trying to figure out a way to cut the noise on a generator. I was
considering the beefed up muffler route but I'm going to investigate the box
route. Concrete block doesn't sound too portable, however.

In an effort to bring the thread back in bounds for the list topic, I'm
going to use the generator to power a TNC.

Harry, KAØTTY

----- Original Message -----
From: Ron L. Sparks <spark51@ibm.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, August 23, 1999 10:07 AM
Subject: [tacgps] Re: Rollover and Question on Week Rollover...

| I suspect you weren't really serious about redesigning the muffler, but
just
| in case... <grin>.
|
| Typically the majority of the sound (70% or some such) comes from the
engine
| block itself. That's why generators for quiet areas, like hospitals are
| enclosed in a sounddampened metal box. I have spent a lot of time
| experimenting with them (I lived in Pakistan for several years and they
were
| a necessity). The best way to quiet one of the beasts without danger of
| carbon monoxide or setting it or something else on fire is to build a
three
| sided cube of concrete block around it with the open side point away from
| you (and hopefully your neighbors). If you put a roof on the cube, you
may
| have to put in some form of ventilation to keep the operating temperature
in
| the normal range.
|
| Subjectively, they also seem to be quietest at a load of about 40-60%.
|
| Couldn't resist,
| Ron
|
|
|
| -----Original Message-----

| From: bounce-tacgps-5718@lists.tapr.org
| [mailto:bounce-tacgps-5718@lists.tapr.org]On Behalf Of Steve Sampson
| Sent: Sunday, August 22, 1999 6:11 PM
| To: TAPR Special Interest Group
| Subject: [tacgps] Re: Rollover and Question on Week Rollover...
|
|
| I bought my first generator this year after the tornado passed by
| about two miles west of me. After listening to that beast and
| thinking of how to redesign the muffler, I have come to the conclusion
| that solar and wind power is the only way to go :-)
|
| Steve
| "noise is cheap, quiet is expensive"
|
|
| ---
| You are currently subscribed to tacgps as: HBURFORD@AIRMAIL.NET
| To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
|
|

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

46. [tacgps] Australian GPS Bug...

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Wed, 25 Aug 1999 19:06:53 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36169-1999.08.25-04.16.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Source: AAP | Published: Wednesday August 25 2:16:26 PM

Almost the entire Australian patrol boat fleet was affected by a satellite
navigation glitch akin to the millennium computer bug, the Defence
Department said today.

A Defence spokesman said the global positioning systems (GPSs) aboard 14 of
the navy's 15 Fremantle-class patrol boats failed at the weekend when
calendars on a ring of 24 satellites orbiting the earth were reset.

But the failures, which occurred when the calendars rolled back to 0000 at
10am (AEST) on Sunday, were anticipated and did not cause major problems,
Assistant Secretary Geoff Davis said.

"The equipment was old and due for replacement, the likelihood of a problem
had been anticipated and as a result had no impact on the capability of the
craft as there were a number of backup systems which were used in its
place," said in a statement.

But he warned the failures on the Fremantle boats had highlighted the
problems of relying on industry guarantees of compliance.

Although similar, the GPS problem is not related to the millennium bug,
which will occur if non-compliant computers roll over dates at midnight on
December 31 to 1900 instead of 2000.

The GPS network, controlled from a US base in Colorado, began operating on
January 6, 1980 and was designed to work over a rolling cycle of 1,024
weeks, or about 20 years.

The first cycle ended on Sunday and many older GPS units, especially ones
made before 1994, were expected to display inaccurate positions and times,
or even cease to function altogether

Darryl Smith, VK2TDS   POBox 169 Ingleburn NSW 2565 Australia
Mobile Number 0412 929 634 [+61 4 12 929 634 International]

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

47. [tacgps] Garmin 25 antenna

From: Ken Larsen <themariner@earthlink.net>
Date: Wed, 25 Aug 1999 12:11:44 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36210-1999.08.25-11.20.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have been working hard to put a radio balloon project together. I just

purchased a Garmin 25 engine to be used as the payload gps. I like to make as much of my own equipment as possible. Rather than buying the recommended GA27, can anyone point me in the right direction to plans/schematic/technical information for constructing a gps antenna for

this specific gps unit. I'd appreciate it.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

48. [tacgps] RE: tacgps digest: August 23, 1999

From: "Frank R. Leslie" <fleslie@palmnet.net>
Date: Wed, 25 Aug 1999 15:31:45 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36255-1999.08.25-14.42.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Having just gotten back from WY to FL, time to first fix seems way too long. Tried multiple acquisition periods using an entered local position. Is Garmin 38 software 3.04 truly EOW compatible, or am I the only one to only get one satellite?

Frank

```
-
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-|
|  Frank R. Leslie          |  Pers. email: mailto:fleslie@palmnet.net |
|  1017 Glenham Drive, NE   |  Prof. email:  mailto:f.leslie@ieee.org  |
|  Palm Bay FL 32905-4855   |  Home: 407-768-6629  |  KD4EYQ  | 990718 |
|  Work: retired |  Fax: email only please | 28-01.3130N / 80-35.6136W |
|                                 ---                                  |
|    Home Page:  http://www.geocities.com/RainForest/2210              |
|                 (Environment and nature)                             |
|    Home Page:  http://www.geocities.com/Yosemite/1270                |
|                 (Outings, Hiking & Wind River trip advice)           |
|    Home Page:  http://www.geocities.com/WallStreet/3298              |
|                 (Finance/Mutual Funds Allocation Suggestions)        |
|                                 ---                                  |
|    "You cannot step twice in the same river."  -- Heraclitus         |
|              c. 535 - c.475 B.C. Greek Philosopher                   |
|=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-|
```

-----Original Message-----
From: bounce-tacgps-7805@lists.tapr.org
[mailto:bounce-tacgps-7805@lists.tapr.org]On Behalf Of TAPR Special Interest Group digest
Sent: Tuesday, August 24, 1999 1:02 AM
To: tacgps digest recipients
Subject: tacgps digest: August 23, 1999

TAPR Special Interest Group Digest for Monday, August 23, 1999.

1. Re: Rollover and Question on Week Rollover...
2. Re: Rollover and Question on Week Rollover...
3. Re: Rollover and Question on Week Rollover...
4. Japanese Problems with GPS rollover
5. Re: 200+ Oncores No problem
6. Re: 200+ Oncores No problem
7. Re: Rollover and Question on Week Rollover...

Subject: Re: Rollover and Question on Week Rollover...
From: Bob Bruninga <bruninga@nadn.navy.mil>

Date: Mon, 23 Aug 1999 09:08:47 -0400 (EDT)
X-Message-Number: 1

On Sun, 22 Aug 1999, Steve Sampson wrote:

> Bob Bruninga wrote:
> >This assumes you are on time-of-use metering which I think is federally
> >required for all new contsrtution since 1990....
>
> Do you have a special meter?

Yes, and they charge you $10 per month to "rent" it! (normal bills
include about $4 per month for meter rental).   I wonder if you can buy
it?

Subject: Re: Rollover and Question on Week Rollover...
From: "Ron L. Sparks" <spark51@ibm.net>
Date: Mon, 23 Aug 1999 10:07:57 -0500
X-Message-Number: 2

I suspect you weren't really serious about redesigning the muffler, but just
in case... <grin>.

Typically the majority of the sound (70% or some such) comes from the engine
block itself. That's why generators for quiet areas, like hospitals are
enclosed in a sounddampened metal box. I have spent a lot of time
experimenting with them (I lived in Pakistan for several years and they were
a necessity). The best way to quiet one of the beasts without danger of
carbon monoxide or setting it or something else on fire is to build a three
sided cube of concrete block around it with the open side point away from
you (and hopefully your neighbors). If you put a roof on the cube, you may
have to put in some form of ventilation to keep the operating temperature in
the normal range.

Subjectively, they also seem to be quietest at a load of about 40-60%.

Couldn't resist,
Ron

-----Original Message-----
From: bounce-tacgps-5718@lists.tapr.org
[mailto:bounce-tacgps-5718@lists.tapr.org]On Behalf Of Steve Sampson
Sent: Sunday, August 22, 1999 6:11 PM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Rollover and Question on Week Rollover...

I bought my first generator this year after the tornado passed by
about two miles west of me. After listening to that beast and
thinking of how to redesign the muffler, I have come to the conclusion
that solar and wind power is the only way to go :-)

Steve
"noise is cheap, quiet is expensive"

Subject: Re: Rollover and Question on Week Rollover...
From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Tue, 24 Aug 1999 05:56:43 +1000
X-Message-Number: 3

OK...
        Firstly I should say that I work for one one the state owned generators in
NSW, Australia, and since I started the thread, I thought I needed to
reply....

> I'm shocked! You mean the power-grid didn't fail, the water pumps didn't
> fail, and all those weapons people bought weren't necessary? :-)

In a sister organisation they were doing an Audit of GPS for Y2K, and EOL.
The guys at one of the centers said they had the only GPS in the
organisation (of 1,000 people). They used it as a clock for their local

servers, and probably to keep the 50 Hz close to spec... Anyway an associate thought that the surveyers also used GPS. The responce back was

'Why in hell would surveyers use GPS?'

Anyway, since it looks as if I am on call, and want tons of overtime, I guess I need to plan my own power outage here in Australia.... That should not be too hard to do... 4 buttons within 500 meters of each other could black out 1/3 of the state!!!! Where were you when the lights went out

> Having studied solar for years, even todays lower prices work out to 100
> years or more payback. But these never include replacing the batteirs
> every 5 years. Thus, compared to 10 cent electricity, you can never even
> break even...

With grid connected solar the prices are better... There are no batteries to depreciate. The Olympic Village has about 1000 W of solar cells on each house connected back into the grid... I do not know what the tarrifs are... It also helps that our companies have solar cells with over 20% efficiency (I think we have the world record)

NSW prices are
A$0.13c regardless of time of day - This is less than US$0.10
A$0.04 for off peak hot water (they decided when you get power for hot water - but we never run out)

These are amongst the cheapest in the world for people who burn coal... (1% Hydroelectric. 0% Nuclear)

But they are the retail prices...

The spot price of electricity is between A$15 and $4,500 per MWatt Hour. Note that this price is on a futures-type market where the companies bid for how much they will generate at what price...

More imporantly, I was working at a power station about 3 years ago when I left uni (I am only 28). Anyway my boss there was proud that he has NEVER PAID AN ELECTRCITY BILL EVER!!!!

This is the head electrical engineer in the largest power station in the southern hemisphere....

He used to live for low rent in a house owned by the organisation which was exempt from electricity. Now he has solar only, and is not connected to the grid. He even runs his arc welder on solar...

Subject: Japanese Problems with GPS rollover
From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Mon, 23 Aug 1999 19:47:14 -0500
X-Message-Number: 4

This is a multi-part message in MIME format.

------=_NextPart_000_003B_01BEEDA0.4C639EE0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

=20
TOKYO (Reuters) - A steady stream of irate customers called Japanese car =
navigation makers Sunday after their automotive directional devices =
failed due to a computer flaw.=20

The screens on some car navigation systems went blank while others froze =
up as a computer bug struck Global Positioning System (GPS) devices, =
electronics company Pioneer Electronic Corp said.=20

Pioneer, one of several car navigation system makers battling the bug, =
had received several hundred phone calls since the problem started at 9 =
a.m., a spokeswoman said.=20

About 450 Pioneer workers manned telephone lines and staffed service =
centers over the weekend to help customers with the GPS problem, she =
said.=20

Some 95,000 car navigation units sold in Japan may be unable to cope =

```
with an internal date change in the system, the Ministry of =
International Trade and Industry said.=20

Four Japanese manufacturers of GPS systems have completed updating only =
about 170,000 of the estimated 260,000 units sold in Japan since 1996 =
and believed to be still in operation.=20

Japanese drivers are heavily reliant on the navigational devices because =
most streets in urban centers such as Tokyo are unnamed and follow =
curving paths laid out among a tangle of property lines.=20

Japan's Maritime Safety Agency has received reports that ships with =
older GPS systems are in or near territorial waters but has not received =
any distress calls as of Sunday noon, a spokesman said.=20

At midnight GMT, the 24 satellites of the Global Positioning System, =
which provide navigational data from 11,000 miles out in space, switched =
their timing system back to zero.=20

The rollover is because the system, which uses radio signals from =
satellites to provide navigation data, was designed to ignore calendar =
dates but keep precise time measured in seconds and weeks.=20

Only 1,024 weeks were allotted from January 6, 1980, before the system =
is reset to zero.=20


------=_NextPart_000_003B_01BEEDA0.4C639EE0
Content-Type: text/html;
        charset="iso-8859-1"
Content-Transfer-Encoding: quoted-printable

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<HTML><HEAD>
<META content=3D"text/html; charset=3Diso-8859-1" =
http-equiv=3DContent-Type>
<META content=3D"MSHTML 5.00.2614.3500" name=3DGENERATOR>
<STYLE></STYLE>
</HEAD>
<BODY bgColor=3D#ffffff>
<DIV><FONT size=3D2><FONT face=3D"Arial, Helvetica, sans-serif" =
size=3D2><FONT=20
face=3DArial size=3D2> 
<P>TOKYO (Reuters) - A steady stream of irate customers called Japanese =
car=20
navigation makers Sunday after their automotive directional devices =
failed due=20
to a computer flaw. </P>
<P>The screens on some car navigation systems went blank while others =
froze up=20
as a computer bug struck Global Positioning System (GPS) devices, =
electronics=20
company Pioneer Electronic Corp said. </P>
<P>Pioneer, one of several car navigation system makers battling the =
bug, had=20
received several hundred phone calls since the problem started at 9 =
a.m., a=20
spokeswoman said. </P>
<P>About 450 Pioneer workers manned telephone lines and staffed service =
centers=20
over the weekend to help customers with the GPS problem, she said. </P>
<P>Some 95,000 car navigation units sold in Japan may be unable to cope =
with an=20
internal date change in the system, the Ministry of International Trade =
and=20
Industry said. </P>
<P>Four Japanese manufacturers of GPS systems have completed updating =
only about=20
170,000 of the estimated 260,000 units sold in Japan since 1996 and =
believed to=20
be still in operation. </P>
<P>Japanese drivers are heavily reliant on the navigational devices =
because most=20
streets in urban centers such as Tokyo are unnamed and follow curving =
paths laid=20
out among a tangle of property lines. </P>
<P>Japan's Maritime Safety Agency has received reports that ships with =
older GPS=20
systems are in or near territorial waters but has not received any =
```

```
distress=20
calls as of Sunday noon, a spokesman said. </P>
<P>At midnight GMT, the 24 satellites of the Global Positioning System, =
which=20
provide navigational data from 11,000 miles out in space, switched their =
timing=20
system back to zero. </P>
<P>The rollover is because the system, which uses radio signals from =
satellites=20
to provide navigation data, was designed to ignore calendar dates but =
keep=20
precise time measured in seconds and weeks. </P>
<P>Only 1,024 weeks were allotted from January 6, 1980, before the =
system is=20
reset to zero. </P></FONT></FONT></FONT></DIV></BODY></HTML>

------=_NextPart_000_003B_01BEEDA0.4C639EE0--


------------------------------------------------------------------------

Subject: Re: 200+ Oncores No problem
From: "Richard Garcia" <k4gps@bellsouth.net>
Date: Mon, 23 Aug 1999 20:56:51 +0000
X-Message-Number: 5

Hi Art, that is well above my knowledge base. I just maintain the
systems I don't do board level repairs. THey weay they teach us is
that the GPS maintains the XO to tolerance but the XO is on standby
at all times and the GPS maintains the Rubidium Osc (RB) which is our
main timing standard. If the RB dies the timing and XO are maintained
by the GPS, if the GPS also dies the XO will maintain for about 4
hours and then will eventually drift, lose lock and the cell will go
down.

There is another person on the list that replied to me and it happens
to be the manufacturer of the product we use in our Lucent Cell
site. Hopefully he will reply to your post, FYI these units are well
into the $10K range so don't offer to buy one! <grin>


> Date:          Sun, 22 Aug 1999 12:02:52 -1000
> To:            "TAPR Special Interest Group" <tacgps@lists.tapr.org>
> From:          "Art Neilson, KH7PZ" <art@hawaii.rr.com>
> Subject:       [tacgps] Re: 200+ Oncores No problem
> Reply-to:      "TAPR Special Interest Group" <tacgps@lists.tapr.org>

> How do you use the GPS with the crystal standard?  I'm interested
> in such a standard to calibrate my HP 5340A Freq counter to.
>
>
> At 04:05 PM 08/22/1999 +0000, you wrote:
> >I kept an eye on 200+ Motorola Oncore GPS's for a few hours before
> >and after the "event". The Oncores are used in a crystal standard
> >that we use on our PCS sites and I can keep somewhat of an eye on all
> >of them via our network.
> >
> >No glitches were noticed while looking at the entire S Florida
> >network on the computer.
> >Richard F. Garcia
> >k4gps@bellsouth.net Ex: N2CZF KA2FXA
> >Jupiter Farms FL.
> >http://www.aprs.net/florida
> >http://www.primeco.com
> >
> >
> >---
> >You are currently subscribed to tacgps as: art@hawaii.rr.com
> >To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
> >
> --
>     __
>    /  )    _/_  It is a capital mistake to theorise before one has data.
>   /--/ __  /    Insensibly one begins to twist facts to suit theories,
> /  (_/ (_<__   Instead of theories to suit facts.
>                      -- Sherlock Holmes, "A Scandal in Bohemia"
> Arthur W. Neilson III, KH7PZ
> Bank of Hawaii Tech Support
```

> art@hawaii.rr.com
>
>
> ---
> You are currently subscribed to tacgps as: K4GPS@BELLSOUTH.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>
Richard F. Garcia
k4gps@bellsouth.net Ex: N2CZF KA2FXA
Jupiter Farms FL.
http://www.aprs.net/florida
http://www.primeco.com

Subject: Re: 200+ Oncores No problem
From: G Sanders <gsanders1@bigfoot.com>
Date: Mon, 23 Aug 1999 21:58:06 -0400
X-Message-Number: 6

Here's another way to do it:

http://www.rt66.com/~shera/

I built one to stabilize the oscillator in my HP5328, and it
works well when compared with a WWVB comparitor receiver.
I use a Garmin 20, but the Oncore works considerably better,
I'm told.

The construction article appeared in the July 98 QST.

Gary WB0BZR

Richard Garcia wrote:
>
> Hi Art, that is well above my knowledge base. I just maintain the
> systems I don't do board level repairs. THey weay they teach us is
> that the GPS maintains the XO to tolerance but the XO is on standby
> at all times and the GPS maintains the Rubidium Osc (RB) which is our
> main timing standard. If the RB dies the timing and XO are maintained
> by the GPS, if the GPS also dies the XO will maintain for about 4
> hours and then will eventually drift, lose lock and the cell will go
> down.

Subject: Re: Rollover and Question on Week Rollover...
From: "Harry Burford" <hburford@airmail.net>
Date: Mon, 23 Aug 1999 22:48:40 -0500
X-Message-Number: 7

THANKYOU!

I've been trying to figure out a way to cut the noise on a generator. I was
considering the beefed up muffler route but I'm going to investigate the box
route. Concrete block doesn't sound too portable, however.

In an effort to bring the thread back in bounds for the list topic, I'm
going to use the generator to power a TNC.

Harry, KAØTTY

----- Original Message -----
From: Ron L. Sparks <spark51@ibm.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, August 23, 1999 10:07 AM
Subject: [tacgps] Re: Rollover and Question on Week Rollover...

| I suspect you weren't really serious about redesigning the muffler, but
just
| in case... <grin>.
|
| Typically the majority of the sound (70% or some such) comes from the

engine
| block itself. That's why generators for quiet areas, like hospitals are
| enclosed in a sounddampened metal box. I have spent a lot of time
| experimenting with them (I lived in Pakistan for several years and they
were
| a necessity). The best way to quiet one of the beasts without danger of
| carbon monoxide or setting it or something else on fire is to build a
three
| sided cube of concrete block around it with the open side point away from
| you (and hopefully your neighbors). If you put a roof on the cube, you
may
| have to put in some form of ventilation to keep the operating temperature
in
| the normal range.
|
| Subjectively, they also seem to be quietest at a load of about 40-60%.
|
| Couldn't resist,
| Ron
|
|
|
| -----Original Message-----
| From: bounce-tacgps-5718@lists.tapr.org
| [mailto:bounce-tacgps-5718@lists.tapr.org]On Behalf Of Steve Sampson
| Sent: Sunday, August 22, 1999 6:11 PM
| To: TAPR Special Interest Group
| Subject: [tacgps] Re: Rollover and Question on Week Rollover...
|
|
| I bought my first generator this year after the tornado passed by
| about two miles west of me. After listening to that beast and
| thinking of how to redesign the muffler, I have come to the conclusion
| that solar and wind power is the only way to go :-)
|
| Steve
| "noise is cheap, quiet is expensive"
|
|
| ---
| You are currently subscribed to tacgps as: HBURFORD@AIRMAIL.NET
| To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
|
|

END OF DIGEST

You are currently subscribed to tacgps as: fleslie@palmnet.net
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

49. [tacgps] RE: tacgps digest: August 23, 1999

From: Henrique Miranda <hmiranda@newton.inescn.pt>
Date: Wed, 25 Aug 1999 22:14:33 +0100 (WET DST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36272-1999.08.25-16.25.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Frank,

>Tried multiple acquisition periods using an entered local position. Is
>Garmin 38 software 3.04 truly EOW compatible, or am I the only one to
only
>get one satellite?

You have to perform an "autolocate" or "search the sky" operation
for the almanac data to be reacquired by your GPS.

Point your browser to http://www.garmin.com/faqs/1.html and you'll

find all the details regarding EOW Rollover compliance for the Garmin
units.

For the GPS 38/40/45/45XL (firmware version 3.04 or lower) the procedure
is pretty simple: hold the PAGE key while powering the unit on; the
receiver
will enter the "search the sky" mode. Leave it in that state until the
acquisition is completed (approximately 20 min. long). Today, I tried this
procedure on my GPS45XL and now it operates normally.

Cheers,

 Henrique Miranda

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

50. [tacgps] Re: Garmin 25 antenna

From: "Doug McKinney" <Design@mt.to>
Date: Wed, 25 Aug 1999 15:55:21 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36287-1999.08.25-18.15.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Ken Larsen <themariner@earthlink.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Wednesday, August 25, 1999 9:11 AM
Subject: [tacgps] Garmin 25 antenna

> I have been working hard to put a radio balloon project together. I just
>
> purchased a Garmin 25 engine to be used as the payload gps. I like to
> make as much of my own equipment as possible. Rather than buying the
> recommended GA27, can anyone point me in the right direction to
> plans/schematic/technical information for constructing a gps antenna for
>
> this specific gps unit. I'd appreciate it.
>
>

 DigiKey has the pacth antenna for $18. This is not an active antenna and
for short (~1'), it should work find. If you use the antenna, make a 2"
square gound plane to solder the antenna in the center. The Garmin 12 has
the same DigiKey pacth antenna with the gound plane.

73's
Doug

> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

51. [tacgps] Re: Garmin 25 antenna

From: Henrique Miranda <hmiranda@newton.inescn.pt>
Date: Thu, 26 Aug 1999 00:19:03 +0100 (WET DST)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: Ken Larsen <themariner@earthlink.net>
Message-ID: <LYR6754-36298-1999.08.25-18.29.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Ken,

>I have been working hard to put a radio balloon project together. I just
>purchased a Garmin 25 engine to be used as the payload gps. I like to
>make as much of my own equipment as possible. Rather than buying the
>recommended GA27, can anyone point me in the right direction to
>plans/schematic/technical information for constructing a gps antenna for
>this specific gps unit. I'd appreciate it.

Try the one described in:

http://www.geocities.com/TheTropics/Cabana/4340/gpsant.html

It is a helical antenna, very easy to build and its construction description
is well detailled. The supplied mechanical data is also complete.

A couple of months ago I built one my self and the results were fairly
good with my GPS45XL unit (though its gain is not as good as the 45XL
detachable antenna.)

Should you need signal amplification (to compensate for eventual cable
losses) you can build one using, for instance, the $2 ERA-3 MMIC amplifier
from MiniCircuits (http://www.minicircuits.com), providing a gain of
21dB@1.6GHz (NF=3.8). This amplifier can even be powered by the 5V
supplied at the antenna connector of most garmin receivers.

Cheers,

 Henrique Miranda

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

52. [tacgps] Question about Oncore VP carrier phase data

From: "Syzygy Research & Technology Ltd." <support@syz.com>
Date: Thu, 26 Aug 1999 18:22:12 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36545-1999.08.26-19.40.36--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi there. I recently purchased 3 Oncore VPs from TAPR for a little
post-processing project I'm doing, and I've run into a little hurdle in
trying to coax the most amount of accuracy out of these little things.

Essentially, I want to be able to write some RINEX files out from the
Oncore data, but I'm having trouble interpreting the carrier phase data. I
just hope I can explain my question well enough - judging from the comments
on this list in the past, I'm sure someone can point me in the right track.

According to the Oncore VP user's guide (which I got from Synergy), the
integrated carrier phase is represented by 4 bytes in the range data output
message: ccff

where cc = integer part (0-65535 cycles) 16 MS bits of carrier phase (above
decimal point)
ff=fractional part (0-65535 cycles) 16 bits of carrier phase NCO below
decimal point at measurement epoch

Now, the way I've been interpreting this is that if I calculate cc+ff/65536
I should end up with the number of cycles of carrier phase required by
RINEX (though obviously with some ambiguities with regards to which "65536
cycle" block in the distance from me to the satellite is being referred to,
not to mention the ambiguities in measuring any number of full cycles of
carrier to the satellite).

In other RINEX files I've seen, the change in carrier phase data
approximates change in C/A code, as I'd suspect (ie: for every meter change
in C/A-derived pseudorange, there are about 5.255 carrier cycles (~19
cm/cycle, as I'd suspect). But the Oncore carrier phase data, interpreted
as I have, is all over the place.

As an example, here are some pseudoranges and carrier phases I interpreted
for a given satellite over a few seconds (1 sample per second) - I'm using
signed arithmetic for carrier phase (ie: if CP>=32768 CP=CP-65536.0) since
the RINEX files I've used before seem to use signed values.

PR	CP
20707506.287	12737.094
20707647.198	32713.588
20707788.091	-12845.455
20707929.298	7112.723
20708070.209	27090.022

```
  20708211.695    -18471.282

Just taking the first two samples as an example, the satellite got 140.911
metres further away, and carrier gained 19976.494 cycles, or 141.76 cycles
per meter, hardly the 5.255 it should be.  And this ratio changes all over
the place... sometimes carrier even loses cycles while satellites are
receding.

Looking at one CP measurement to the next (and considering the 16 bit
wraparound effect), the differences do stay relatively consistent, though
they do change over time, as I'd suspect.  The ratios of PR to CP are just
substantially larger than they should be, and change a lot (in a sample
data set I collected for an hour or so, the ratio varied from around 500 to
120).

At any rate, this wacky carrier phase stuff is really confusing my post
processing software - it works fine if I calculate "fictional" carrier
phase values based on the pseudorange, though obviously suffers from fairly
large (~10 metres or so) errors as a result of using just the C/A code.
Since the Oncore does support carrier phase, I'd obviously really like to
use the real data, if only I was interpreting it right.

So, if anyone can help me interpret what is being sent by the Oncore for
carrier phase, or especially specifically be able to help me out on how to
convert the data to the carrier phase format required by RINEX, it would be
greatly appreciated!

Thanks for your help!

Dan

--
Syzygy Research & Technology Ltd. |email: sales@syz.com, support@syz.com
Box 83                            |       images@syz.com, townnet@syz.com
Legal, AB, T0G 1L0, CANADA        |- Creators of "The Digital Universe"
Phone: (780) 961-2213             |- home of "The Astronomical Image Library"
WWW: http://www.syz.com/          |  & "The Alberta Town & Business Network"



---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

53. [tacgps] RE: Question about Oncore VP carrier phase data

```
From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Fri, 27 Aug 1999 12:08:19 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36684-1999.08.27-11.23.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
        I looked at my docs, and if you refer to message @@Eg, then, I may
have an answer.

        From what you describe, you refer to the integrated carrier phase
portion of the @@Eg message. The first part, cc, refers to CYCLES (In
the range 0 - 65535 cycles), and ff, refers to the fractional part of
the carrier phase cycle. It has the range 0 - 65535 meaning 0 -
359.9945 degrees. I expect that "ff/65536 + cc" should give you the
number of cycles (Complete and partial). From the page 6.132, bottom,
I read "ICP is the integer and fractional part of ICP treated as a 32
bit unsigned quantity"

        There is a web site with more info you could use, but I do not have
the URL handy. I'll try to post it a bit later.

        I never worked on this stuff yet, since I too find it confusing.

                Martin VE2MRX

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net
-----------------------
Martin VE2MRX
Beloeil, Quebec, Canada
```

FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Syzygy Research
&
Technology Ltd.
Sent: Thursday, August 26, 1999 19:22
To: TAPR Special Interest Group
Subject: [tacgps] Question about Oncore VP carrier phase data

<snip>

According to the Oncore VP user's guide (which I got from Synergy),
the
integrated carrier phase is represented by 4 bytes in the range data
output
message: ccff

where cc = integer part (0-65535 cycles) 16 MS bits of carrier phase
(above
decimal point)
ff=fractional part (0-65535 cycles) 16 bits of carrier phase NCO below
decimal point at measurement epoch

Now, the way I've been interpreting this is that if I calculate
cc+ff/65536
I should end up with the number of cycles of carrier phase required by
RINEX (though obviously with some ambiguities with regards to which
"65536
cycle" block in the distance from me to the satellite is being
referred to,
not to mention the ambiguities in measuring any number of full cycles
of
carrier to the satellite).

<snip>

Thanks for your help!

Dan

--
Syzygy Research & Technology Ltd. |email: sales@syz.com,
support@syz.com
Box 83 | images@syz.com,
townnet@syz.com
Legal, AB, T0G 1L0, CANADA |- Creators of "The Digital
Universe"
Phone: (780) 961-2213 |- home of "The Astronomical Image
Library"
WWW: http://www.syz.com/ | & "The Alberta Town & Business
Network"

You are currently subscribed to tacgps as: VE2MRX@INAME.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

54. [tacgps] RE: Question about Oncore VP carrier phase data

From: "Syzygy Research & Technology Ltd." <support@syz.com>
Date: Sat, 28 Aug 1999 14:16:36 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36850-1999.08.28-15.27.40--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Subject: RE: Question about Oncore VP carrier phase data
>From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
>Date: Fri, 27 Aug 1999 12:08:19 -0400
>X-Message-Number: 1

Thanks for your response!

>   I looked at my docs, and if you refer to message @@Eg, then, I may
>have an answer.

That's indeed the message I'm referring to..

>
>   From what you describe, you refer to the integrated carrier phase
>portion of the @@Eg message. The first part, cc, refers to CYCLES (In
>the range 0 - 65535 cycles), and ff, refers to the fractional part of
>the carrier phase cycle. It has the range 0 - 65535 meaning 0 -
>359.9945 degrees. I expect that "ff/65536 + cc" should give you the
>number of cycles (Complete and partial). From the page 6.132, bottom,
>I read "ICP is the integer and fractional part of ICP treated as a 32
>bit unsigned quantity"

That's indeed the same conclusion that I came to... but I don't see how
the numbers that result from that equation can mean what they claim to.
Essentially, the rate of change of the numbers from one reading to the next
seems to be much too high for the physical value that I assume they're
supposed to be representing..

>
>   There is a web site with more info you could use, but I do not have
>the URL handy. I'll try to post it a bit later.

If you find the URL, I'd really appreciate it if you could let me know!

Thanks for your comments.

Dan

--
Syzygy Research & Technology Ltd. |email: sales@syz.com, support@syz.com
Box 83 | images@syz.com, townnet@syz.com
Legal, AB, T0G 1L0, CANADA |- Creators of "The Digital Universe"
Phone: (780) 961-2213 |- home of "The Astronomical Image Library"
WWW: http://www.syz.com/ | & "The Alberta Town & Business Network"

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

55. [tacgps] RE: Question about Oncore VP carrier phase data

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Sat, 28 Aug 1999 16:48:05 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-36853-1999.08.28-16.05.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi again!
        First, the site I was thinking of does not have exactly what I was
looking for, but should be useful anyway.
http://callisto.worldonline.nl/~samsvl/software.htm

        There is one other, with most subjects covered.
http://joe.mehaffey.com/

        Also http://www.ngs.noaa.gov/CORS/Rinex2.html should be very useful!

                Martin
[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Syzygy Research
&
Technology Ltd.
Sent: Saturday, August 28, 1999 15:17
To: TAPR Special Interest Group

Subject: [tacgps] RE: Question about Oncore VP carrier phase data

>Subject: RE: Question about Oncore VP carrier phase data
>From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
>Date: Fri, 27 Aug 1999 12:08:19 -0400
>X-Message-Number: 1

Thanks for your response!

<snip>

>   There is a web site with more info you could use, but I do not have
>the URL handy. I'll try to post it a bit later.

If you find the URL, I'd really appreciate it if you could let me
know!

Thanks for your comments.

Dan

--

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

56. [tacgps] Re: Garmin 25 antenna

From: Ken Larsen <themariner@earthlink.net>
Date: Sun, 29 Aug 1999 18:50:37 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37094-1999.08.29-18.01.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the information, Doug.

Doug McKinney wrote:

> ----- Original Message -----
> From: Ken Larsen <themariner@earthlink.net>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Wednesday, August 25, 1999 9:11 AM
> Subject: [tacgps] Garmin 25 antenna
>
> > I have been working hard to put a radio balloon project together. I just
> >
> > purchased a Garmin 25 engine to be used as the payload gps. I like to
> > make as much of my own equipment as possible. Rather than buying the
> > recommended GA27, can anyone point me in the right direction to
> > plans/schematic/technical information for constructing a gps antenna for
> >
> > this specific gps unit. I'd appreciate it.
> >
> >
>
> DigiKey has the pacth antenna for $18. This is not an active antenna and
> for short (~1'), it should work find. If you use the antenna, make a 2"
> square gound plane to solder the antenna in the center. The Garmin 12 has
> the same DigiKey pacth antenna with the gound plane.
>
> 73's
> Doug
>
> > ---
> > You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> > To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
>
> ---
> You are currently subscribed to tacgps as: themariner@earthlink.net
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

57. [tacgps] Re: Question about Oncore VP carrier phase data

From: Brooks Shera <ebs@lanl.gov>
Date: Tue, 31 Aug 1999 15:12:31 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37455-1999.08.31-16.21.19--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi
When I saw your note last week I assumed someone would answer your
question about the Oncore carrier phase but since no one has I'll
have a go at it.

First I think your "signed arithemetic" convention is a little confusing
so I have added a third column to your table that is "unsigned" and
adds 65536 to your negative values and whenever the 16-bit phase
count rolls over.

PR	CP	Unsigned CP	CP Difference
20707506.287	12737.094	12737.094	--
20707647.198	32713.588	32713.588	19976.
20707788.091	-12845.455	52692.455	19979.
20707929.298	7112.723	72648.723	19956.
20708070.209	27090.022	92626.022	19978.
20708211.695	-18471.282	112601.282	19975.

In the 4th column I subtract the consecutive unsigned CP values.
Notice that the differences are now all about the same - 19975 cycles.

However, these differences are NOT equal to the differences in
pseudoranges, which are all about 141 meters, or about 740
cycles. That is, 19975 is not equal to 740!

The reason is that the "carrier phase" value reported by
the Oncore is not really the phase of the incoming carrier, but
the DIFFERENCE in phase between the carrier and the Oncore
local oscillator. Moreover, the local oscillator is purposely
offset from the carrier by about 20,625 Hz (this value is not
exact because the local oscillator is just an simple xtal
oscillator and it drifts with temperature, etc.) The 20 kHz offset
insures that the difference frequency is always "positive"
even though the Doppler shift of the signal from the satellite
(about 4 KHz max) may be be + or - depending on whether it's
approaching or departing.

So the value you see in the difference column is mostly the 20 KHz
offset. The 740 cps Doppler that you expect to see is only makes
a small contribution. In fact, if you subtract 20625 from 19975
you will get about 650. You don't get exactly 740 because
the offset in your receiver wasn't exactly 20625 Hz when you took
the data.

So what good is the carrier phase value from the Oncore?
(BTW, the Oncore is not unique in having an L.O. offset. Unless
the gps receiver includes an atomic frequency standard there is
no way to measure the "absolute" phase of the incoming signal).

Actually, the "pseudo" phase data is just fine because the post-processing
software typically uses only phase differences between 2 or
more satellites. The offset cancels out in the phase difference
since the local oscillator frequency/phase is the same for both.

Single (2 sats, 1 receiver) and double (2 sats, 2 receivers) differences
are used because of the integer-ambiguity problem you mentioned.
But that's another story...

Hope this helped a little. The Oncore VP is a fine, low-cost
receiver for surveying and it's a sad thing that Motorola
is dropping it. Oh yes, what processing software are you using?

Brooks

>Hi there. I recently purchased 3 Oncore VPs from TAPR for a little
>post-processing project I'm doing, and I've run into a little hurdle in
>trying to coax the most amount of accuracy out of these little things.
>
>Essentially, I want to be able to write some RINEX files out from the

>Oncore data, but I'm having trouble interpreting the carrier phase data. I
>just hope I can explain my question well enough - judging from the comments
>on this list in the past, I'm sure someone can point me in the right track.
>
>According to the Oncore VP user's guide (which I got from Synergy), the
>integrated carrier phase is represented by 4 bytes in the range data output
>message: ccff
>
>where cc = integer part (0-65535 cycles) 16 MS bits of carrier phase (above
>decimal point)
>ff=fractional part (0-65535 cycles) 16 bits of carrier phase NCO below
>decimal point at measurement epoch
>
>Now, the way I've been interpreting this is that if I calculate cc+ff/65536
>I should end up with the number of cycles of carrier phase required by
>RINEX (though obviously with some ambiguities with regards to which "65536
>cycle" block in the distance from me to the satellite is being referred to,
>not to mention the ambiguities in measuring any number of full cycles of
>carrier to the satellite).
>
>In other RINEX files I've seen, the change in carrier phase data
>approximates change in C/A code, as I'd suspect (ie: for every meter change
>in C/A-derived pseudorange, there are about 5.255 carrier cycles (~19
>cm/cycle, as I'd suspect). But the Oncore carrier phase data, interpreted
>as I have, is all over the place.
>
>As an example, here are some pseudoranges and carrier phases I interpreted
>for a given satellite over a few seconds (1 sample per second) - I'm using
>signed arithmetic for carrier phase (ie: if CP>=32768 CP=CP-65536.0) since
>the RINEX files I've used before seem to use signed values.
>
>   PR   CP
> 20707506.287   12737.094
> 20707647.198   32713.588
> 20707788.091   -12845.455
> 20707929.298   7112.723
> 20708070.209   27090.022
> 20708211.695   -18471.282
>
>Just taking the first two samples as an example, the satellite got 140.911
>metres further away, and carrier gained 19976.494 cycles, or 141.76 cycles
>per meter, hardly the 5.255 it should be. And this ratio changes all over
>the place... sometimes carrier even loses cycles while satellites are
>receding.
>
>Looking at one CP measurement to the next (and considering the 16 bit
>wraparound effect), the differences do stay relatively consistent, though
>they do change over time, as I'd suspect. The ratios of PR to CP are just
>substantially larger than they should be, and change a lot (in a sample
>data set I collected for an hour or so, the ratio varied from around 500 to
>120).
>
>At any rate, this wacky carrier phase stuff is really confusing my post
>processing software - it works fine if I calculate "fictional" carrier
>phase values based on the pseudorange, though obviously suffers from fairly
>large (~10 metres or so) errors as a result of using just the C/A code.
>Since the Oncore does support carrier phase, I'd obviously really like to
>use the real data, if only I was interpreting it right.
>
>So, if anyone can help me interpret what is being sent by the Oncore for
>carrier phase, or especially specifically be able to help me out on how to
>convert the data to the carrier phase format required by RINEX, it would be
>greatly appreciated!

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

September 1999

Original source file: tacgps.9909
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9909

1. [tacgps] Re: Question about Oncore VP carrier phase data

From: "Syzygy Research & Technology Ltd." <support@syz.com>
Date: Wed, 1 Sep 1999 23:29:05 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37679-1999.09.02-00.40.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>From: Brooks Shera <ebs@lanl.gov>
>Date: Tue, 31 Aug 1999 15:12:31 -0600
>X-Message-Number: 1
>
>Hi
>When I saw your note last week I assumed someone would answer your
>question about the Oncore carrier phase but since no one has I'll
>have a go at it.

Thanks for your reply!

Your description was really informative, and I think I really have a good handle on exactly what the carrier phase numbers mean (at least, much better than I did before :-) It's funny that I haven't been able to find anything approaching this sort of description in the Oncore VP manual.

>Oh yes, what processing software are you using?

Up until now, I've been using my own home-brew post processing software, which considers and seems to be able to handle the C/A pseudoranges just fine (though it can't do much better than an error of a few metres, no doubt mostly because of the coarser phase resolution).

To deal with the carrier phase data, I've been experimenting with GeoGenius by Spectra Precision... mostly because they have a time-limited demo available I can use to evaluate if it (and the Oncore) will do what I need it to before spending the money on purchasing it. Any other suggestions for good post-processing software capable of both static and kinematic surveys?

Unfortunately, it does seem to have a problem in dealing with the "pseudo" carrier ranges as output from the Oncore directly. I tried adding 65536 to the output when the phase wrapped (as you did in your description) thinking that maybe it was just getting confused with a wrap every few seconds. It just gives all kinds of errors in reading the carrier phase data.

So I tried to do something a bit sneaky - I don't know how valid this is, but it does seem to work to improve the accuracy, at least somewhat. For whatever reason, the post processing software seems to expect carrier phase to be changing at the same rate as code phase... so I calculate an "approximate" carrier phase based on the first pseudorange as a starting point. Then, as the time difference between two readings seems to be determined from the LO, I approximate the current LO offset by determining the GPS local time difference between two readings (adding 0.001 sec if the difference is less than 1 sec, to compensate for the 1 ms jump that periodically occurs to realign the local clock with true GPS local time). I then calculate the LO offset by offset=L1freq*timediff-L1freq. I don't know if this is a valid way of calculating the LO offset, but the result does come to around 20625 Hz with an typical curve of oscillator drift as the device comes up to operating temperature, so it *looks* like it gives reasonable values.

I then subtract the returned carrier phase difference (corrected for wraparounds) from the derived oscillator offset frequency - this should give me the "real" change in carrier phase, which I then add to the previous carrier phase to give the "current" phase. At least, all the satellite carrier phases recorded at a given epoch are corrected by the same amount, so comparing differences between phases of 2 different satellites you described should work out the same.

Again, I have no idea if this approach is mathematically or physically valid, but it *does* seem to generate reasonable carrier phase pseudoranges that the post processing software is happy with. In a little test run I did with a dwell time of an hour, I post-processed a short (~6 meter) baseline to within about 2cm of the distance measured with a measuring tape (and judging by the condition of the tape, most of this error is probably

due to the errors in making the tape measurement :-). The post-processing
software reported an expected 1 sigma error of around 0.5 mm, but I think
that's being overly optimistic. In a longer baseline of around 3 km, the
software reported a 1 sigma error of about 150 mm, though I have nothing to
check it against. In any case, it's MUCH better than I'd been able to do
before.

Does what I'm doing above make sense at all? Or (better yet), do you have
a better way of calculating carrier phase to stick in a Rinex file, or know
of post-processing software which can deal with the carrier phase as
returned from the Oncore more directly?

Thanks again for your detailed explanation of what's going on! For the
first time, I'm beginning to understand what's happening (and I have to
admit, I couldn't figure out how any receiver with a normal "cheap" clock
could calculate "true" carrier phase with any degree of accuracy. The
difference approach you described makes much more sense.

Dan

--
Syzygy Research & Technology Ltd. |email: sales@syz.com, support@syz.com
Box 83 | images@syz.com, townnet@syz.com
Legal, AB, T0G 1L0, CANADA |- Creators of "The Digital Universe"
Phone: (780) 961-2213 |- home of "The Astronomical Image Library"
WWW: http://www.syz.com/ | & "The Alberta Town & Business Network"

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] $20 GPS from MAVIN.

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Thu, 2 Sep 1999 17:18:42 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37686-1999.09.02-02.29.03--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

G'Day,

Does anyone know what will happen to these GPS receivers at 00:00 UTC on 1
January? The present year is 0x99.... Does the year become 0x00, or 0xA0, or
does it stop working? Does anyone have a GPS tester we can use to find out?

Darryl

Darryl Smith, VK2TDS   POBox 169 Ingleburn NSW 2565 Australia
Mobile Number 0412 929 634 [+61 4 12 929 634 International]

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] Create RTCM104 messages with Oncore GPS

From: "Charles Monod" <cmonod@cmo.ch>
Date: Thu, 2 Sep 1999 10:23:20
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37729-1999.09.02-10.33.48--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I bought Oncore VP with VP interface board. I will like to be able to
create messages RTCM-104 starting from the Pseudorange messages of
Oncore, but I do not know how to make. Does Y have to you it a person
who could give me information to arrive there?

In advance thank you.

Charles

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Re: Create RTCM104 messages with Oncore GPS

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Thu, 2 Sep 1999 15:44:53 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37770-1999.09.02-14.55.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello to all,

 I currently have a program for the IBM PC in beta test
that will accept the Motorola @@Ce messages on COM1
and will transmit RTCM SC104 type 1 messages on COM1
or COM2. I can send the executable to you, or to anyone
else who wants to test its operation. The ZIP file is about
25K in size. I plan to make the source and docs available
to TAPR as a service to anyone interested in DGPS and
in setting up a DGPS reference station.

 Jim Korenz   N8PXW

bounce-tacgps-5599@lists.tapr.org on 09/02/99 11:25:15 AM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Create RTCM104 messages with Oncore GPS

I bought Oncore VP with VP interface board. I will like to be able to
create messages RTCM-104 starting from the Pseudorange messages of
Oncore, but I do not know how to make. Does Y have to you it a person
who could give me information to arrive there?

In advance thank you.

Charles

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: Question about Oncore VP carrier phase data

From: Brooks Shera <ebs@lanl.gov>
Date: Thu, 2 Sep 1999 16:05:10 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37781-1999.09.02-17.13.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi again

>To deal with the carrier phase data, I've been experimenting with GeoGenius
>by Spectra Precision... mostly because they have a time-limited demo
>available I can use to evaluate if it (and the Oncore) will do what I need
>it to before spending the money on purchasing it. Any other suggestions
>for good post-processing software capable of both static and kinematic
>surveys?

So far I have just been playing with post-processing software I wrote
myself,
since the commercial packages are pretty expensive. At the present
it only does static surveys. I usually try to occupy a site for
40 minutes or so. This lets me divide it into two 20-minute runs
as a check on correctly resolving the integer phase ambiquity. Usually
the two runs agree within 1-2 mm.

The stationary Oncore receiver sits on the roof of my house and the
binary data
is recorded on a PC using TAC32. The "rover" Oncore is powered by four D

cells
and binary data is recorded (at 30-second intervals) on a PalmPilot III
using a program I wrote. The PalmPilot program also initializes
the Oncore with the appropriate @@ messages. This makes a handy,
lightweight surveyor you can stick in your pocket.

There are several NGS gps-surveyed benchmarks within 10-20 miles
of my house and I have visited a few of these. For each benchmark
I compute the position of my stationary reference antenna. For the
nearer BMs the positions agree within about 20 mm. However, if I
revisit a BM on another day I get the same position as before within
5 mm, so I kinda think maybe the NGS is wrong sometimes. :-)

For the BMs that are 10-15 miles away the position disagreement
increases to about 50 mm. This may be the limit considering the Oncore
is only an L1 receiver. But hey, 2 inches at 10 miles isn't too bad.
>

>So I tried to do something a bit sneaky - I don't know how valid this is,
>but it does seem to work to improve the accuracy, at least somewhat. For
>whatever reason, the post processing software seems to expect carrier phase
>to be changing at the same rate as code phase... so I calculate an
>"approximate" carrier phase based on the first pseudorange as a starting
>point. Then, as the time difference between two readings seems to be
>determined from the LO, I approximate the current LO offset by determining
>the GPS local time difference between two readings (adding 0.001 sec if the
>difference is less than 1 sec, to compensate for the 1 ms jump that
>periodically occurs to realign the local clock with true GPS local time).
>I then calculate the LO offset by offset=L1freq*timediff-L1freq. I don't
>know if this is a valid way of calculating the LO offset, but the result
>does come to around 20625 Hz with an typical curve of oscillator drift as
>the device comes up to operating temperature, so it *looks* like it gives
>reasonable values.

I think what you are doing makes sense. The 20625 Hz LO offset
causes the measurement time to advance (retard?) by 13 usec every second.

The Oncore computes the actual time of the measurement, relative to
the gps satellite clocks, (gps_local_time) when it solves the
equations to find its position. Therefore the second-to-second
changes in gps_local_time are an accurate measurement of the
LO offset. The time accuracy should be a 50 nsec (the accuracy of the
1 pps timing pulses), or about 15 meters in range. This is
probably better than the accuracy of the pseudorange for a
single satellite and should be good enough to fool your
program that your corrected "sneaky" value is correct.
>
>I then subtract the returned carrier phase difference (corrected for
>wraparounds) from the derived oscillator offset frequency - this should
>give me the "real" change in carrier phase, which I then add to the
>previous carrier phase to give the "current" phase. At least, all the
>satellite carrier phases recorded at a given epoch are corrected by the
>same amount, so comparing differences between phases of 2 different
>satellites you described should work out the same.
>
>Again, I have no idea if this approach is mathematically or physically
>valid, but it *does* seem to generate reasonable carrier phase pseudoranges
>that the post processing software is happy with. In a little test run I
>did with a dwell time of an hour, I post-processed a short (~6 meter)
>baseline to within about 2cm of the distance measured with a measuring tape
>(and judging by the condition of the tape, most of this error is probably
>due to the errors in making the tape measurement :-). The post-processing
>software reported an expected 1 sigma error of around 0.5 mm, but I think
>that's being overly optimistic. In a longer baseline of around 3 km, the
>software reported a 1 sigma error of about 150 mm, though I have nothing to
>check it against. In any case, it's MUCH better than I'd been able to do
>before.
>
>Does what I'm doing above make sense at all? Or (better yet), do you have
>a better way of calculating carrier phase to stick in a Rinex file, or know
>of post-processing software which can deal with the carrier phase as
>returned from the Oncore more directly?

The Oncore can output an @@Bk message which claims to contain the
clock bias and the LO offset. However, the last time I looked
at this message it seemed to be nonsense. Maybe you can understand it.
I can ignore the LO offset since my software only looks at differences,
and saving the Bk message only fills up RAM in the PalmPilot. :-)
>

>Thanks again for your detailed explanation of what's going on! For the
>first time, I'm beginning to understand what's happening (and I have to
>admit, I couldn't figure out how any receiver with a normal "cheap" clock
>could calculate "true" carrier phase with any degree of accuracy. The
>difference approach you described makes much more sense.

Thanks, I'm glad my hard-earned insights were a bit useful. I suppose
there are half a dozen Motorola receiver designers out there
that read this newsgroup and are snickering to themselves and
thinking "have these guys got it screwed up!".

BTW, I looked at the GeoGenius website but it seems to be seriously
broken. When I tried to download the trial software all I see
is a bunch of html. Don't suppose you still have the downloaded zipped
demo version laying around?

Brooks

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: Question about Oncore VP carrier phase data

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Thu, 2 Sep 1999 21:00:02 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37793-1999.09.02-20.12.36--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
        My guess is a difference of map datum... What do you think? If they
are all offset in the same direction...

                Martin

[E_O_MSG]

mailto:ve2mrx@amsat.org
mailto:ve2mrx@rac.ca
mailto:ve2mrx@qsl.net

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

There are several NGS gps-surveyed benchmarks within 10-20 miles
of my house and I have visited a few of these. For each benchmark
I compute the position of my stationary reference antenna. For the
nearer BMs the positions agree within about 20 mm. However, if I
revisit a BM on another day I get the same position as before within
5 mm, so I kinda think maybe the NGS is wrong sometimes. :-)

For the BMs that are 10-15 miles away the position disagreement
increases to about 50 mm. This may be the limit considering the
Oncore
is only an L1 receiver. But hey, 2 inches at 10 miles isn't too bad.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] No Differential Output

From: Charles Dapples <ccdapple@wtp.net>
Date: Fri, 03 Sep 1999 13:41:17 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37893-1999.09.03-14.51.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
    After running my DGPS board with Mot. VP Oncore gps and
Tac 32 software for several days I tried to setup a DGPS ref station
by connecting the DGPS board to a TNC as per the manual.
I find no output comming from the DGPS1B to pins 3 and 5 of
the male DE9 connector. Nor is there anything showing when I put an
oscilloscope on pin 7 of the output chip, The LED blinks on and off at
the

proper 10 sec. interval and the TAC32 software shows the
GPS is working correctly. Also the GPS Mode Selections page
in TAC32 is setup exactly as shown in the manual. Without
a schematic of the board it is hard to see what is going on!
    Anyone have any ideas what might be wrong?

--

Chris / KF7KN

--
+-------------------------------+--------------------------------+
| e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507 |
+-------------------------------+--------------------------------+
| kf7kn@amsat.org | Fax: (406) 446-1607 |
+-------------------------------+--------------------------------+

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: No Differential Output

From: Boyd Prestwood <k5ykg@bellatlantic.net>
Date: Fri, 03 Sep 1999 17:28:04 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37906-1999.09.03-16.37.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Charles Dapples wrote:
>
> Hi All,
>   After running my DGPS board with Mot. VP Oncore gps and
> Tac 32 software for several days I tried to setup a DGPS ref station
> by connecting the DGPS board to a TNC as per the manual.
> I find no output comming from the DGPS1B to pins 3 and 5 of
> the male DE9 connector. Nor is there anything showing when I put an

K5YKG RESPONDS: You didn't say what type of TNC... I will assume a KPC
variant... you want pins 2 (TXD) and 5 (GND) not 3 & 5. Data on Pin-2 will get
AFSK transmitted toward the radio.

Have fun es 73 de Boyd K5YKG

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Re: No Differential Output

From: "Doug McKinney" <Design@mt.to>
Date: Fri, 3 Sep 1999 17:16:13 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-37942-1999.09.03-19.38.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Charles Dapples <ccdapple@wtp.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Friday, September 03, 1999 12:41 PM
Subject: [tacgps] No Differential Output

> Hi All,
>   After running my DGPS board with Mot. VP Oncore gps and
> Tac 32 software for several days I tried to setup a DGPS ref station
> by connecting the DGPS board to a TNC as per the manual.
> I find no output comming from the DGPS1B to pins 3 and 5 of
> the male DE9 connector. Nor is there anything showing when I put an
> oscilloscope on pin 7 of the output chip, The LED blinks on and off at
> the
> proper 10 sec. interval and the TAC32 software shows the
> GPS is working correctly. Also the GPS Mode Selections page
> in TAC32 is setup exactly as shown in the manual. Without
> a schematic of the board it is hard to see what is going on!
>   Anyone have any ideas what might be wrong?
>
> --

I built the board and Steve programmed the board. I am reading this without
time to properly respond, but I wanted to inform you that I have seen your
comments and will respond by tomorrow. Wife wants to go to dinner, then to
mother-in-laws to reset her VCR, after a power outage!!! Boy what a night!
Initial conditions, the blinking light indicate coding is being done. Since
I need to run, review the wiring. I'll get back to you1 TA TA

73's
 Doug

>
> Chris / KF7KN
>
> --
> +------------------------------+------------------------------+
> | e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507 |
> +------------------------------+------------------------------+
> | kf7kn@amsat.org | Fax: (406) 446-1607 |
> +------------------------------+------------------------------+
>
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Splitting GPS antennas into 2 receivers

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 7 Sep 1999 13:57:15 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-38443-1999.09.07-13.07.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello all,
 As you know I have been working on the RTCM 104 message
format and setting up a DGPS base station in my basement. In order
to test the validity of my generated corrections, I needed a "rover"
in addition to the base correction station. I tried to split my external
Mot amplified antenna into the 2 GPS receivers by using an inexpensive
cable splitter and a DC block. This solution didn't work, so I had to
pull another coax through the window, and find another amplified
GPS antenna.
 Over the holiday, I obtained an RCA D800 DSS signal
splitter at Radio Shack for $9.95. This little gem includes the
steering diodes (the correct polarity to power the antenna) and
has a rated freq range of 40-2150 MHz. It works well at the GPS
freq. My SS no. dropped from 150 to 140-130 range, depending
on the sat. The "locked" sats providing the pseudorange
corrections remained the same before/after the splitter. I used
"F" connector to "BNC" adapters (also from Radio Shack) to
 mate with the RG 58 coax. The 50 to 75 ohm mismatch did
not seem to cause any problems. I feel that this is a good
alternative to running multiple coax's and antennas for 2
GPS units.

 Jim Korenz   N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Re: Question about Oncore VP carrier phase data

From: "Syzygy Research & Technology Ltd." <support@syz.com>
Date: Wed, 8 Sep 1999 20:17:05 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-38660-1999.09.08-21.36.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>From: Brooks Shera <ebs@lanl.gov>
>Date: Thu, 2 Sep 1999 16:05:10 -0600
...
>The stationary Oncore receiver sits on the roof of my house and the

>binary data
>is recorded on a PC using TAC32. The "rover" Oncore is powered by four D
>cells
>and binary data is recorded (at 30-second intervals) on a PalmPilot III
>using a program I wrote. The PalmPilot program also initializes
>the Oncore with the appropriate @@ messages. This makes a handy,
>lightweight surveyor you can stick in your pocket.

Sounds like we've developed similar setups. I've written simple data
logging s/w for the Cassiopeia E-11 PDA, and both the GPS and Cassiopeia
are being run off an old 12V fire alarm backup battery. I've built two of
everything, so my base and rover are both "mobile". It's actually been
working quite nice!

My PDAs have 30 Mb and 48 Mb of memory, so memory hasn't been much of a
problem (At the moment I've been going overboard and recording samples at 1
second intervals, and the broadcast data whenever it changes). This
"oversampling" seems to help get rid of some of the "noise", since I can
filter the data down later..

>There are several NGS gps-surveyed benchmarks within 10-20 miles
>of my house and I have visited a few of these. For each benchmark
>I compute the position of my stationary reference antenna. For the
>nearer BMs the positions agree within about 20 mm. However, if I
>revisit a BM on another day I get the same position as before within
>5 mm, so I kinda think maybe the NGS is wrong sometimes. :-)

I've just discovered where some nearby benchmarks are to me, and hope to be
able to go out and take some measurements sometime soon.

>For the BMs that are 10-15 miles away the position disagreement
>increases to about 50 mm. This may be the limit considering the Oncore
>is only an L1 receiver. But hey, 2 inches at 10 miles isn't too bad.

I'd say :-)

>The Oncore can output an @@Bk message which claims to contain the
>clock bias and the LO offset. However, the last time I looked
>at this message it seemed to be nonsense. Maybe you can understand it.
>I can ignore the LO offset since my software only looks at differences,
>and saving the Bk message only fills up RAM in the PalmPilot. :-)

I never noticed that the @@Bk message had this information - thanks for
pointing it out! When I have the chance, I'll peek at the data and see if
I can interpret what's it's trying to tell me. It may give more accurate
bias/offset information than the method I'm currently using.

>Thanks, I'm glad my hard-earned insights were a bit useful. I suppose
>there are half a dozen Motorola receiver designers out there
>that read this newsgroup and are snickering to themselves and
>thinking "have these guys got it screwed up!".

No doubt :-) Do you recall where you find this information from yourself?

Dan

--
Syzygy Research & Technology Ltd. |email: sales@syz.com, support@syz.com
Box 83 | images@syz.com, townnet@syz.com
Legal, AB, T0G 1L0, CANADA |- Creators of "The Digital Universe"
Phone: (780) 961-2213 |- home of "The Astronomical Image Library"
WWW: http://www.syz.com/ | & "The Alberta Town & Business Network"

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Multiplexing signals

From: Charles Dapples <ccdapple@wtp.net>
Date: Thu, 09 Sep 1999 08:15:50 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-38742-1999.09.09-09.26.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
        This may be slightly off topic but it is related.

I have a DGPS unit, weather station and APRS system, all remote
from my house. What I am looking for is information on multiplexing
the signals from these remote units over a single radio freq using
one modem for each unit. There was a design for a diode matrix
several years ago in a packet newsletter but I don't seem to be able
ot locate it.
    Does anyone have information or ideas for getting multiple data
streams through a single radio link? The distance is about 1/2 mile.

--

Chris / KF7KN

--

+-------------------------------+-------------------------------+
| e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507 |
+-------------------------------+-------------------------------+
| kf7kn@amsat.org | Fax: (406) 446-1607 |
+-------------------------------+-------------------------------+

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] Oncore VP - gone!

From: Brooks Shera <ebs@lanl.gov>
Date: Thu, 9 Sep 1999 14:33:29 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-38771-1999.09.09-15.42.25--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just spoke with Art at Synergy and he reports that the supply
Oncore VP's is now exhausted. Based on last years sales, Motorola
thought they had enough chips to last through 1999. But the
demand in recent months has been larger than expected, so
the VP is history.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Re: Oncore VP - gone!

From: Robert Winingham <kc5ejk@onramp.net>
Date: Fri, 10 Sep 1999 00:38:50 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-38836-1999.09.10-00.48.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I just spoke with Art at Synergy and he reports that the supply
>Oncore VP's is now exhausted.
>

I thought TAPR had some on back order, I wonder if any UNITs will be at DCC
this month?

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Re: Oncore VP - gone!

From: "Doug McKinney" <Design@mt.to>
Date: Thu, 9 Sep 1999 22:49:38 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-38838-1999.09.10-01.12.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Robert Winingham <kc5ejk@onramp.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, September 09, 1999 10:38 PM

Subject: [tacgps] Re: Oncore VP - gone!

> >I just spoke with Art at Synergy and he reports that the supply
> >Oncore VP's is now exhausted.
> >
>
> I thought TAPR had some on back order, I wonder if any UNITs will be at
DCC
> this month?
>
> 73
>
>

TAPR has 10 left in stock as of today!
73
Doug

> -----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] Y2K GPS Shutdown?

From: "Darryl Smith" <vk2tds@ozemail.com.au>
Date: Wed, 15 Sep 1999 20:26:35 +1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39675-1999.09.15-05.36.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This was forwarded to me by a friend who is on a search and rescue mailing
list... Is it rubish?

Darryl

Darryl Smith, VK2TDS   POBox 169 Ingleburn NSW 2565 Australia
Mobile Number 0412 929 634 [+61 4 12 929 634 International]

----- Original Message -----
From: Adrian Ashcroft <Adrian_Ashcroft@UManitoba.CA>
To: <sar-l@listserv.islandnet.com>
Sent: Tuesday, September 14, 1999 8:10 AM
Subject: GPS Y2K shutdown?

I have heard a rumour which sounds ridiculous, but I have to ask. Has
anyone heard that the civilian GPS signals are supposed to be shut down
starting in the year 2000? According to what I was told, the shutdown was
to be indefinite.

As I said, it sounds ridiculous. Does anyone know if this rumour is related
to anything factual?

Adrian Ashcroft, Navigator, Civil Air Search & Rescue Association

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: Y2K GPS Shutdown?

From: Tom Van Baak <tvb@veritas.com>
Date: Wed, 15 Sep 1999 03:41:21 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: Darryl Smith <vk2tds@ozemail.com.au>
Message-ID: <LYR6754-39676-1999.09.15-05.52.19--lyris.tacgps#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Darryl Smith wrote:
>
> This was forwarded to me by a friend who is on a search and rescue mailing
> list... Is it rubish?
>
> Darryl
...
> I have heard a rumour which sounds ridiculous, but I have to ask. Has
> anyone heard that the civilian GPS signals are supposed to be shut down
> starting in the year 2000? According to what I was told, the shutdown was
> to be indefinite.

Yes, rubish. But my guess is that the person heard about
the proposed permanent decommission of Loran-C navigation
at the end of 2000 and confused that with GPS navigation.

Last I heard the decommission issue has been settled and
Loran-C operations have been extended to 2008. See:

  http://www.boatus.com/news/loran.htm
  http://www.loran.org/news/lorandecision.htm
  http://web.ionsys.com/~magnum/longwave/gps.htm

/tvb

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] Re: Y2K GPS Shutdown?

From: "Steve Sampson" <ssampson@www.usa-site.net>
Date: Wed, 15 Sep 1999 06:02:10 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: <Adrian_Ashcroft@UManitoba.CA>
Message-ID: <LYR6754-39679-1999.09.15-06.16.15--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aviation, Marine, Surveyors, and consumers, have invested 100's of
millions on GPS. Tom probably has the source of the rumor identified,
as Loran C was scheduled to shut down after 2000. Omega has already
shut down. Congress didn't like putting all the eggs in one GPS basket,
but they can run their Loran stations as long as they want, it's the user
community that will die off rapidly, as equipment costs "tend toward
infinity"
as my calculus teacher used to say... By 2002, no one will even remember
Loran C.

GPS will be around after 2000, and will even have another civilian
frequency.

-----Original Message-----

>I have heard a rumour which sounds ridiculous, but I have to ask. Has
>anyone heard that the civilian GPS signals are supposed to be shut down
>starting in the year 2000? According to what I was told, the shutdown was
>to be indefinite.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: Y2K GPS Shutdown?

From: clark@tomcat.gsfc.nasa.gov
Date: Wed, 15 Sep 99 11:58:04 UTC
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-39680-1999.09.15-07.10.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

totally false -- no basis in fact.

Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Re: Y2K GPS Shutdown?

From: Tom Van Baak <tvb@veritas.com>
Date: Wed, 15 Sep 1999 14:58:07 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39741-1999.09.15-17.09.20--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Sampson wrote:

> as my calculus teacher used to say... By 2002, no one will even remember
> Loran C.

True, except for those of us that use Loran as an additional
NIST tracable frequency source...

I'm curious how many other TACGPS members use old Austron gear
(e.g., models 2000, 2100, etc.) as frequency standards? Some
of these units have built-in oscillator disciplining functions
and frequency comparators. It makes it much more convenient to
use as a standard than a plain GPS receiver. And Loran has no SA.

/tvb

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] Re: Y2K GPS Shutdown?

From: "John K. Pringle" <jpringle@tampabay.rr.com>
Date: Wed, 15 Sep 1999 19:55:31 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39761-1999.09.15-19.06.26--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve --

I use a Loran-C receiver/comparator built many years ago from an article in
the July 1983 issue of Radio-Electronics. It has served me well and is
functional today although GPS is now my primary reference. I have also used
the Austron products at work.

I will miss Loran-C.

John

-----Original Message-----
From: bounce-tacgps-5605@lists.tapr.org
[mailto:bounce-tacgps-5605@lists.tapr.org]On Behalf Of Tom Van Baak
Sent: Wednesday, September 15, 1999 5:58 PM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Y2K GPS Shutdown?

Steve Sampson wrote:

> as my calculus teacher used to say... By 2002, no one will even remember
> Loran C.

True, except for those of us that use Loran as an additional
NIST tracable frequency source...

I'm curious how many other TACGPS members use old Austron gear
(e.g., models 2000, 2100, etc.) as frequency standards? Some
of these units have built-in oscillator disciplining functions
and frequency comparators. It makes it much more convenient to
use as a standard than a plain GPS receiver. And Loran has no SA.

/tvb

You are currently subscribed to tacgps as: JPRINGLE@TAMPABAY.RR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Re: Y2K GPS Shutdown?

From: "Charles R. Schultz" <n2pua@cybrtyme.com>
Date: Wed, 15 Sep 1999 20:19:00 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39770-1999.09.15-20.29.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The people in Romulus, NY probably won't miss Loran-C if they ever get a
quiet phone line or AM radio. I swear you could almost hear that
RAT-tat-tat-tat-RAT-tat-tat-tat in your head after living and working
near the Seneca Army Depot station (LORSTA-Seneca) for a few years. ;^)

"John K. Pringle" wrote:
>
>
> I will miss Loran-C.
>
> John
>
--

Chuck Schultz/   Mailto:n2pua@cybrtyme.com
            /   Home page: http://www.cybrtyme.com/personal/n2pua
Eastaboga /   (Under construction forever!)
Alabama   /   AIM Screen Name: n2pua   ICQ ID Number: 11654121
36260   /   It's not the thing you fling, but the fling, itself!

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Re: Y2K GPS Shutdown?

From: "John K. Pringle" <jpringle@tampabay.rr.com>
Date: Thu, 16 Sep 1999 10:19:28 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39875-1999.09.16-09.31.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes. I can imagine those people in Romulus will have quite a celebration
when the plug is pulled on Loran-C.
I can remember the ham radio community's huge celebration when the plug was
pulled on Loran-A.

73   John   W4SF

-----Original Message-----
From: bounce-tacgps-5605@lists.tapr.org
[mailto:bounce-tacgps-5605@lists.tapr.org]On Behalf Of Charles R.
Schultz
Sent: Wednesday, September 15, 1999 9:19 PM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Y2K GPS Shutdown?

The people in Romulus, NY probably won't miss Loran-C if they ever get a
quiet phone line or AM radio. I swear you could almost hear that
RAT-tat-tat-tat-RAT-tat-tat-tat in your head after living and working
near the Seneca Army Depot station (LORSTA-Seneca) for a few years. ;^)

"John K. Pringle" wrote:
>
>
> I will miss Loran-C.
>
> John
>
--

Chuck Schultz/   Mailto:n2pua@cybrtyme.com
            /   Home page: http://www.cybrtyme.com/personal/n2pua
Eastaboga /   (Under construction forever!)
Alabama   /   AIM Screen Name: n2pua   ICQ ID Number: 11654121
36260   /   It's not the thing you fling, but the fling, itself!

You are currently subscribed to tacgps as: JPRINGLE@TAMPABAY.RR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

24. [tacgps] Re: Y2K GPS Shutdown?

From: billp@wwpc.com (Bill Putney)
Date: Thu, 16 Sep 1999 09:52:33 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39898-1999.09.16-12.05.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What I heard on the news a few months ago was that because there are so many ways to get around Selective Availability (SA) for military purposes that by 2006 SA will be permanently shut off. All of the non-NATO/US users that don't have access to the mil. GPS have figured out ways to use civilian GPS and correct for SA. The U.S. military planners see little advantage to SA now and it's always been a pain for all of us. The fact is that instead of being turned on during a conflict as SA was intended to be, it gets turned off because of a shortage of mil GPS units that forces military users to buy civilian units on the open market for use in the battle theater. I know this happened during "Desert Storm".

Here's a quote from the "the FACT SHEET for U.S. GLOBAL POSITIONING SYSTEM POLICY":

"...Beginning in 2000, the President will make an annual determination on continued use of GPS Selective Availability. To support this determination, the Secretary of Defense, in cooperation with the Secretary of Transportation, the Director of Central Intelligence, and heads of other appropriate departments and agencies, shall provide an assessment and recommendation on continued SA use."

Starting around 2005 a new civilian GPS signal with greater accuracy will be opened for use.

So I suppose some one could twist that to imply the the "civilian" accuracy GPS will be shut down. Actually the same civilian system will run but without SA's dithering as well as the addition of the extra signal(s) in 2005.

- Bill

References:
http://206.65.196.30/gps/geninfo/white.htm
http://www.navcen.uscg.mil/gps/geninfo/i2r.htm
http://206.65.196.30/gps/issues/dotgpspressreleases.htm

--

```
=========================================================================
#  Bill Putney - WB6RFW            | My repeater:443.400 Mhz-100 Hz #
#  WWPC                            | It's not open, it's not closed,#
#  6025 Chelton Drive              | it's controlled. It's open for #
#  Oakland, CA 94611               | membership (which is free...). #
#  billp@wwpc.com - (510)531-2412  | Go figure...                   #
=========================================================================
```

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] Help please - NMEA specification

From: Allan Gibbs <allan@prescot.demon.co.uk>
Date: Thu, 16 Sep 1999 19:16:34 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39907-1999.09.16-14.23.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greetings folks.

I wonder if anyone can point me in the direction of a source of information regarding the NMEA specification?

I'm looking for ways - assuming they exist - of converting data output

as an ASCII string to the NMEA format so if you've been there, done that
& got the tee-shirt I'd really like to know.....!!

Regards,

Allan.

--
Allan Gibbs - Prescot, Merseyside, U.K

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] Re: Help please - NMEA specification

From: Allan Gibbs <allan@prescot.demon.co.uk>
Date: Thu, 16 Sep 1999 22:16:15 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-39942-1999.09.16-16.27.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In a message dated Thu, 16 Sep 1999 at 19:16:34,
Allan Gibbs writes.....

>Greetings folks.
>
>I wonder if anyone can point me in the direction of a source of
>information regarding the NMEA specification?
>
>I'm looking for ways - assuming they exist - of converting data output
>as an ASCII string to the NMEA format so if you've been there, done that
       ~~~~~~~~~~~~
>& got the tee-shirt I'd really like to know.....!!

Ooooops! "ASCII string" should read HEX string!! Sorry!

Regards,

Allan

--
Allan Gibbs - Prescot, Merseyside, U.K

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] Re: Help please - NMEA specification

From: "Bob Smallwood" <bsmallwood@taratec.com>
Date: Thu, 16 Sep 1999 22:13:45 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40000-1999.09.16-21.26.50--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Several of us have decoded the packed-binary datastream of the Japanese
surplus unit being sold by Mavin Systems ($20 8-channel GPS WITH antenna!)

I have a MS Access database program that does it... there's also a compiled
version.

Is this the GPS to which you refer?

Bob Smallwood, N3FM

> -----Original Message-----
> From: bounce-tacgps-10095@lists.tapr.org
> [mailto:bounce-tacgps-10095@lists.tapr.org]On Behalf Of Allan Gibbs
> Sent: Thursday, September 16, 1999 5:16 PM
> To: TAPR Special Interest Group
> Subject: [tacgps] Re: Help please - NMEA specification
>
       ~~~~~~~~~~~~

>
> In a message dated Thu, 16 Sep 1999 at 19:16:34,
> Allan Gibbs writes.....
>
>
> >Greetings folks.
> >
> >I wonder if anyone can point me in the direction of a source of
> >information regarding the NMEA specification?
> >
> >I'm looking for ways - assuming they exist - of converting
> data output
> >as an ASCII string to the NMEA format so if you've been
> there, done that
>   ~~~~~~~~~~~~
> >& got the tee-shirt I'd really like to know.....!!
>
> Ooooops! "ASCII string" should read HEX string!! Sorry!
>
> Regards,
>
> Allan
>
> --
> Allan Gibbs - Prescot, Merseyside, U.K
>
>
>
> ---
> You are currently subscribed to tacgps as: smallwood@technologist.com
> To unsubscribe send a blank email to
> leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Re: Help please - NMEA specification

From: "Doug McKinney" <Design@mt.to>
Date: Thu, 16 Sep 1999 20:41:50 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40024-1999.09.16-23.04.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Allan Gibbs <allan@prescot.demon.co.uk>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, September 16, 1999 2:16 PM
Subject: [tacgps] Re: Help please - NMEA specification

> In a message dated Thu, 16 Sep 1999 at 19:16:34,
> Allan Gibbs writes.....
>
>
> >Greetings folks.
> >
> >I wonder if anyone can point me in the direction of a source of
> >information regarding the NMEA specification?
> >
> >I'm looking for ways - assuming they exist - of converting data output
> >as an ASCII string to the NMEA format so if you've been there, done that
>   ~~~~~~~~~~~~
> >& got the tee-shirt I'd really like to know.....!!
>
> Ooooops! "ASCII string" should read HEX string!! Sorry!
>
> Regards,
>
> Allan
>
> --
> Allan Gibbs - Prescot, Merseyside, U.K
>
>

The TAPR web site www.tapr.org/tapr/html/Foncorevp.html has an article, I

wrote, about the NMEA format in ASCII. It's only a matter of software
programming to take the Hex data and reformatting into NMEA-183 ASCII
format. You need to define each data field in Hex and convert that Hex data
field into ASCII data fields and sequence the data fields into a particular
NMEA sentence, like the GGA NEMA senteance structure. More can be found by
a web search in GPS and NMEA subject areas. I had to reformat my C drive
and lost all my bookmarks, otherwise I would have provided more information.

 I am curious as to what GPS you are converting Hex to NMEA? Most support
both, except the GPS (Aisin Seiki Co.) sold for $20 on the Web!

73
Doug

>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] Re: Help please - NMEA specification

From: "C. Wayne Buhrman" <wayne@planetcable.net>
Date: Thu, 16 Sep 1999 23:58:16 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40026-1999.09.16-23.09.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I can't speak for Allan, but I am very interested in what you have found out
about communicating with the Mavin Systems GPS receiver.

Please share it with us.

Thanks.
Wayne Buhrman, N2DJD

----- Original Message -----
From: Bob Smallwood <bsmallwood@taratec.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, September 16, 1999 10:13 PM
Subject: [tacgps] Re: Help please - NMEA specification

> Several of us have decoded the packed-binary datastream of the Japanese
> surplus unit being sold by Mavin Systems ($20 8-channel GPS WITH antenna!)
>
> I have a MS Access database program that does it... there's also a
compiled
> version.
>
> Is this the GPS to which you refer?
>
>
> Bob Smallwood, N3FM
>
>
> > -----Original Message-----
> > From: bounce-tacgps-10095@lists.tapr.org
> > [mailto:bounce-tacgps-10095@lists.tapr.org]On Behalf Of Allan Gibbs
> > Sent: Thursday, September 16, 1999 5:16 PM
> > To: TAPR Special Interest Group
> > Subject: [tacgps] Re: Help please - NMEA specification
> >
> >
> > In a message dated Thu, 16 Sep 1999 at 19:16:34,
> > Allan Gibbs writes.....
> >
> >
> > >Greetings folks.
> > >
> > >I wonder if anyone can point me in the direction of a source of
> > >information regarding the NMEA specification?
> > >
> > >I'm looking for ways - assuming they exist - of converting

> > data output
> > >as an ASCII string to the NMEA format so if you've been
> > there, done that
> >   ~~~~~~~~~~~~
> > >& got the tee-shirt I'd really like to know.....!!
> >
> > Ooooops! "ASCII string" should read HEX string!! Sorry!
> >
> > Regards,
> >
> > Allan
> >
> > --
> > Allan Gibbs - Prescot, Merseyside, U.K
> >
> >
> >
> > ---
> > You are currently subscribed to tacgps as: smallwood@technologist.com
> > To unsubscribe send a blank email to
> > leave-tacgps-6754G@lists.tapr.org
> >
>
>
> ---
> You are currently subscribed to tacgps as: WAYNE@PLANETCABLE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] Electro-Mavin $20 GPS

From: "Bob Smallwood" <smallwood@technologist.com>
Date: Fri, 17 Sep 1999 01:11:02 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: <smallwood@technologist.com>, <john@mavin.com>
Message-ID: <LYR6754-40043-1999.09.17-00.23.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The Electro-Mavin webpage (http://mavin.com/slickitems.html) has details
of modification to the circuit board. This is necessary because the data
specs available from Mavin are for the receiver SUB-BOARD and not the main
circuit board connection... (it seems nobody knows the specs for THAT
datastream). So, we decode the packed binary into real data...

The above webpage includes links to descriptions and also to Tim Laren's
most recent software for decoding the data stream. I took a less elegant,
brute-force approach in Microsoft Access. We both display lat/long/alt,
time, some satellite specs, ellipses, etc...

I also have data saved to a table once a minute, and some graphical displays
of movement, or "house drift"; the data is also available for other
manipulation. The database uses a demo version of a serial port OCX control.
I also have a fairly complete reconstruction of the $GPGGA, $GPGSV, and
$GPRMC sentences available in variables and in text boxes of the Access
form... (if I only knew how to write a COM port driver, I could feed the
results into mapping programs !!! -- anybody want to collaborate?).

I will be glad to send the mdb file and instructions for getting the OCX to
those who request it via private email (must have Access 97 or 2000 to use
it)!

Bob Smallwood, N3FM
<smallwood@technologist.com>

P.S. I recommend this unit to those of you who don't mind cutting a couple
of PC board traces and doing a LITTLE bit of soldering... I regularly track
6-7 satellites with PDOP around 2. For $20, it's tough to beat! (I'll take
my advertising fees in more receivers, please!) <g>

>
> I can't speak for Allan, but I am very interested in what you
> have found out
> about communicating with the Mavin Systems GPS receiver.
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

31. [tacgps] Re: Help please - NMEA specification

From: "Daniel J. Bernal" <dabernal@cantv.net>
Date: Fri, 17 Sep 1999 06:49:14 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40061-1999.09.17-06.01.05--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello All,

Can anyone tell me where can I buy this Mavin $20.00 GPS...?

Thank you

Daniel Bernal
dabernal@cantv.net

-----Mensaje original-----
De: C. Wayne Buhrman <wayne@planetcable.net>
Para: TAPR Special Interest Group <tacgps@lists.tapr.org>
Fecha: Viernes, 17 de Septiembre de 1999 12:05 a.m.
Asunto: [tacgps] Re: Help please - NMEA specification

>I can't speak for Allan, but I am very interested in what you have found
out
>about communicating with the Mavin Systems GPS receiver.
>
>Please share it with us.
>
>Thanks.
>Wayne Buhrman, N2DJD
>
>
>----- Original Message -----
>From: Bob Smallwood <bsmallwood@taratec.com>
>To: TAPR Special Interest Group <tacgps@lists.tapr.org>
>Sent: Thursday, September 16, 1999 10:13 PM
>Subject: [tacgps] Re: Help please - NMEA specification
>
>
>> Several of us have decoded the packed-binary datastream of the Japanese
>> surplus unit being sold by Mavin Systems ($20 8-channel GPS WITH
antenna!)
>>
>> I have a MS Access database program that does it... there's also a
>compiled
>> version.
>>
>> Is this the GPS to which you refer?
>>
>>
>> Bob Smallwood, N3FM
>>
>>
>> > -----Original Message-----
>> > From: bounce-tacgps-10095@lists.tapr.org
>> > [mailto:bounce-tacgps-10095@lists.tapr.org]On Behalf Of Allan Gibbs
>> > Sent: Thursday, September 16, 1999 5:16 PM
>> > To: TAPR Special Interest Group
>> > Subject: [tacgps] Re: Help please - NMEA specification
>> >
>> >
>> > In a message dated Thu, 16 Sep 1999 at 19:16:34,
>> > Allan Gibbs writes.....
>> >
>> >
>> > >Greetings folks.
>> > >

>> > >I wonder if anyone can point me in the direction of a source of
>> > >information regarding the NMEA specification?
>> > >
>> > >I'm looking for ways - assuming they exist - of converting
>> > data output
>> > >as an ASCII string to the NMEA format so if you've been
>> > there, done that
>> >   ~~~~~~~~~~~~
>> > >& got the tee-shirt I'd really like to know.....!!
>> > >
>> > Ooooops! "ASCII string" should read HEX string!! Sorry!
>> >
>> > Regards,
>> >
>> > Allan
>> >
>> > --
>> > Allan Gibbs - Prescot, Merseyside, U.K
>> >
>> >
>> >
>> > ---
>> > You are currently subscribed to tacgps as: smallwood@technologist.com
>> > To unsubscribe send a blank email to
>> > leave-tacgps-6754G@lists.tapr.org
>> >
>>
>>
>> ---
>> You are currently subscribed to tacgps as: WAYNE@PLANETCABLE.NET
>> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>>
>
>
>---
>You are currently subscribed to tacgps as: daniel@bernal.com
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

32. [tacgps] Re: Help please - NMEA specification

From: "Doug McKinney" <Design@mt.to>
Date: Fri, 17 Sep 1999 07:14:19 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40095-1999.09.17-09.36.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: C. Wayne Buhrman <wayne@planetcable.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, September 16, 1999 8:58 PM
Subject: [tacgps] Re: Help please - NMEA specification

> I can't speak for Allan, but I am very interested in what you have found
out
> about communicating with the Mavin Systems GPS receiver.
>
> Please share it with us.

Oh yes, I will. But I will not get to it for another month, just to many
projects ahead of the Mavin Systems GPS receiver. I picked up the GPS at a
Ham Radio flea market (Foothills) in San Jose and Mavin was there. He said
he has about 600-800 left of the 5000 he had. If you didn't know, he has a
web site http://mavin.com and don't use http://www.mavin.com . This web
site has all the latest info and a contributions section. In that section
is software for getting ASCII data out of the proprietary format. These GPS
units were a real bargin, if for nothing esle than the antenna! You get the
GPS and an antenna for $20!! the Cable package is not neccessary. Good
luck.
73
Doug

>

> Thanks.
> Wayne Buhrman, N2DJD
>
>
> ----- Original Message -----
> From: Bob Smallwood <bsmallwood@taratec.com>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Thursday, September 16, 1999 10:13 PM
> Subject: [tacgps] Re: Help please - NMEA specification
>
>
> > Several of us have decoded the packed-binary datastream of the Japanese
> > surplus unit being sold by Mavin Systems ($20 8-channel GPS WITH
antenna!)
> >
> > I have a MS Access database program that does it... there's also a
> compiled
> > version.
> >
> > Is this the GPS to which you refer?
> >
> >
> > Bob Smallwood, N3FM
> >
> >
> > > -----Original Message-----
> > > From: bounce-tacgps-10095@lists.tapr.org
> > > [mailto:bounce-tacgps-10095@lists.tapr.org]On Behalf Of Allan Gibbs
> > > Sent: Thursday, September 16, 1999 5:16 PM
> > > To: TAPR Special Interest Group
> > > Subject: [tacgps] Re: Help please - NMEA specification
> > >
> > >
> > > In a message dated Thu, 16 Sep 1999 at 19:16:34,
> > > Allan Gibbs writes.....
> > >
> > >
> > > >Greetings folks.
> > > >
> > > >I wonder if anyone can point me in the direction of a source of
> > > >information regarding the NMEA specification?
> > > >
> > > >I'm looking for ways - assuming they exist - of converting
> > > data output
> > > >as an ASCII string to the NMEA format so if you've been
> > > there, done that
> > >   ~~~~~~~~~~~~
> > > >& got the tee-shirt I'd really like to know.....!!
> > >
> > > Ooooops! "ASCII string" should read HEX string!! Sorry!
> > >
> > > Regards,
> > >
> > > Allan
> > >
> > > --
> > > Allan Gibbs - Prescot, Merseyside, U.K
> > >
> > >
> > >
> > > ---
> > > You are currently subscribed to tacgps as: smallwood@technologist.com
> > > To unsubscribe send a blank email to
> > > leave-tacgps-6754G@lists.tapr.org
> > >
> >
> >
> > ---
> > You are currently subscribed to tacgps as: WAYNE@PLANETCABLE.NET
> > To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

33. [tacgps] Re: Help please - NMEA specification

From: Allan Gibbs <allan@prescot.demon.co.uk>
Date: Sat, 18 Sep 1999 09:56:31 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40218-1999.09.18-04.40.55--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In a message dated Thu, 16 Sep 1999 at 20:41:50,
Doug McKinney writes.....

>The TAPR web site www.tapr.org/tapr/html/Foncorevp.html has an article, I
>wrote, about the NMEA format in ASCII. It's only a matter of software
>programming to take the Hex data and reformatting into NMEA-183 ASCII
>format. You need to define each data field in Hex and convert that Hex data
>field into ASCII data fields and sequence the data fields into a particular
>NMEA sentence, like the GGA NEMA senteance structure. More can be found by
>a web search in GPS and NMEA subject areas. I had to reformat my C drive
>and lost all my bookmarks, otherwise I would have provided more information.
>
> I am curious as to what GPS you are converting Hex to NMEA? Most support
>both, except the GPS (Aisin Seiki Co.) sold for $20 on the Web!
>
>73
>Doug

Doug et al:

Many thanks for the responses so far to my request for help.

Yes, I and a few others over her (UK) have discovered Electro Mavin's
$20 GPS module manufactured by Aisin Seiki Co. and apparently intended
for use in cars.

Most of us here are working towards getting NMEA data out of the thing
so it can be hooked to TNCs for use with APRS.

Personally, I'm also intrigued by the possibility of using an LCD
display module to show some basic information such as lat, lon, speed
etc.

Unfortunately I don't have the knowledge or expertise to fully implement
either of these projects alone but with (a fair amount of) help from you
knowledgeable folks on this list, I should be able to manage!

We're off to a good start, so thanks again to all.

Regards,

Allan.
--
Allan Gibbs - Prescot, Merseyside, U.K

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

34. [tacgps] Re: Oncore VP - gone!

From: Reg Clemens <reg@dwf.com>
Date: Sat, 18 Sep 1999 13:26:46 -0600 (MDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40261-1999.09.18-14.38.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brooks Shera <ebs@lanl.gov> said

>I just spoke with Art at Synergy and he reports that the supply
>Oncore VP's is now exhausted.
>

I have yet to see/find any decent info on the M12 (guess I should phone Art)
but for timing accuracy, the one-page datasheet says <500ns with SA on.

The equivalent UT data sheet says the same thing, but then goes on to say

<50ns in position hold mode.

So my questions.

    (1) does the above imply that the M12 DOESNT have a position hold mode,
        or is it just sloppy preparation of the slick data sheet.

    (2) Will the M12 do everything that the VP did?
        They mention Motorola Binary Format, but it would be nice to see
        a users manual to see what is implemented.
        Clearly some messages will have to be modified for the 12 chan
        operation, but is everything else there?

    (3) If the M12 would be useful for timekeeping, is anyone working on
        modifying the TAC2 board to support this board?

                                        Reg.Clemens
                                        reg@dwf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

35. [tacgps] DCC this coming Weekend in Phoenix

From: Greg Jones <wd5ivd@tapr.org>
Date: Sat, 18 Sep 1999 14:40:46 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40272-1999.09.18-14.53.59--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Don't forget that the 1999 ARRL and TAPR Digital Communications Conference
is being held this next week Sept 24-26 in Phoenix, AZ.

For more details visit: http://www.tapr.org/dcc

The tentative schedule and proceedings abstracts are now available on the
conference page.

Look forward to seeing you at this year's DCC.

Cheers - Greg Jones, WD5IVD

Greg Jones, WD5IVD
        President TAPR (http://www.tapr.org)
        PhD Candidate, Instructional Technology, UT Austin

email: wd5ivd@tapr.org
web: http://www.tapr.org/~wd5ivd

Experience is what you get when you were expecting something else.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

36. [tacgps] Re: Help please - NMEA specification

From: "Doug McKinney" <Design@mt.to>
Date: Sat, 18 Sep 1999 15:07:00 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: <j@harper.com>
Message-ID: <LYR6754-40308-1999.09.18-17.29.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Allan Gibbs <allan@prescot.demon.co.uk>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Saturday, September 18, 1999 1:56 AM
Subject: [tacgps] Re: Help please - NMEA specification

> In a message dated Thu, 16 Sep 1999 at 20:41:50,
> Doug McKinney writes.....

>
> >The TAPR web site www.tapr.org/tapr/html/Foncorevp.html has an article, I
> >wrote, about the NMEA format in ASCII. It's only a matter of software
> >programming to take the Hex data and reformatting into NMEA-183 ASCII
> >format. You need to define each data field in Hex and convert that Hex
data
> >field into ASCII data fields and sequence the data fields into a
particular
> >NMEA sentence, like the GGA NEMA senteance structure. More can be found
by
> >a web search in GPS and NMEA subject areas. I had to reformat my C drive
> >and lost all my bookmarks, otherwise I would have provided more
information.
> >
> > I am curious as to what GPS you are converting Hex to NMEA? Most
support
> >both, except the GPS (Aisin Seiki Co.) sold for $20 on the Web!
> >
> >73
> >Doug
>
> Doug et al:
>
> Many thanks for the responses so far to my request for help.
>
> Yes, I and a few others over her (UK) have discovered Electro Mavin's
> $20 GPS module manufactured by Aisin Seiki Co. and apparently intended
> for use in cars.
>
> Most of us here are working towards getting NMEA data out of the thing
> so it can be hooked to TNCs for use with APRS.
>
> Personally, I'm also intrigued by the possibility of using an LCD
> display module to show some basic information such as lat, lon, speed
> etc.
>
> Unfortunately I don't have the knowledge or expertise to fully implement
> either of these projects alone but with (a fair amount of) help from you
> knowledgeable folks on this list, I should be able to manage!
>
> We're off to a good start, so thanks again to all.
>
> Regards,
>
> Allan.
> --
> Allan Gibbs - Prescot, Merseyside, U.K
>

For the LCD, Harper Tecnologies harper.com is selling a LCD kit. Have
purchased one about 2.5 years ago. So, that should make the LCD integration
easy!
73
Doug

>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

37. [tacgps] Re: Oncore VP - gone!

From: "Doug McKinney" <Design@mt.to>
Date: Sat, 18 Sep 1999 15:10:07 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40309-1999.09.18-17.32.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Reg Clemens <reg@dwf.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Saturday, September 18, 1999 12:26 PM
Subject: [tacgps] Re: Oncore VP - gone!

>
> Brooks Shera <ebs@lanl.gov> said
>
> >I just spoke with Art at Synergy and he reports that the supply
> >Oncore VP's is now exhausted.
> >
>
> I have yet to see/find any decent info on the M12 (guess I should phone
Art)
> but for timing accuracy, the one-page datasheet says <500ns with SA on.
>
> The equivalent UT data sheet says the same thing, but then goes on to say
> <50ns in position hold mode.
>
> ---
>
> So my questions.
>
>   (1) does the above imply that the M12 DOESNT have a position hold
mode,
> or is it just sloppy preparation of the slick data sheet.
>
>   (2) Will the M12 do everything that the VP did?
> They mention Motorola Binary Format, but it would be nice to see
> a users manual to see what is implemented.
> Clearly some messages will have to be modified for the 12 chan
> operation, but is everything else there?
>
>   (3) If the M12 would be useful for timekeeping, is anyone working on
> modifying the TAC2 board to support this board?
>
>
> Reg.Clemens
> reg@dwf.com
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

38. [tacgps] Fw: Re: Oncore VP - gone!

From: "Doug McKinney" <Design@mt.to>
Date: Sat, 18 Sep 1999 15:44:12 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40312-1999.09.18-18.07.21--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I errored in sending my last response and I got a feedback from the TA{R
srever (Lyris), so I am sending this again, becuase I don't know what has
been sent. Better twice than not at all.
73
Doug

----- Original Message -----
From: Doug McKinney <Design@mt.to>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Saturday, September 18, 1999 3:22 PM
Subject: Re: [tacgps] Re: Oncore VP - gone!

>
> ----- Original Message -----
> From: Reg Clemens <reg@dwf.com>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Saturday, September 18, 1999 12:26 PM
> Subject: [tacgps] Re: Oncore VP - gone!
>
>
> >
> > Brooks Shera <ebs@lanl.gov> said

> >
> > >I just spoke with Art at Synergy and he reports that the supply
> > >Oncore VP's is now exhausted.
> > >
> >
> > I have yet to see/find any decent info on the M12 (guess I should phone
> Art)
> > but for timing accuracy, the one-page datasheet says <500ns with SA on.
> >
> > The equivalent UT data sheet says the same thing, but then goes on to
say
> > <50ns in position hold mode.
> >
> > ---
> >
> > So my questions.
> >
> >   (1) does the above imply that the M12 DOESNT have a position hold
> mode,
> > or is it just sloppy preparation of the slick data sheet.
>
> The M12 is <500ns and was not going to have DGPS output, but Motorola was
> convinced that DGPS output was wanted by the users. This should imply
that
> postion hold mode would be available! Part of the problem with the VP was
> the manufacturer of the Xtal was not going to continue that item, and
> therefore, M12 has a less superior Xtal and thus > 50ns of the VP.
>
> >
> >   (2) Will the M12 do everything that the VP did?
> > They mention Motorola Binary Format, but it would be nice to see
> > a users manual to see what is implemented.
> > Clearly some messages will have to be modified for the 12 chan
> > operation, but is everything else there?
>
> I am on the list to get one from Art, as soon as they are available. Art
> had 3 units, which he shipped to his most needed users. The rest are due
> any time now! There is no other data available that I know of, beyond
the
> Web sites.
>
> >
> >   (3) If the M12 would be useful for timekeeping, is anyone working on
> > modifying the TAC2 board to support this board?
>
> I built the VPGUIB, GARIB and the DGPSIB. When I get the M12, I will be
> working on a SMD PCB to incorporate the power supply, RS232, TAC2 and DGPS
> (parts missing for the parts functions not ordered). As far as time
> keeping, it appears the GT+, Garmin 20/25 and M12 will be about equal at
> <500ns!
>
>   Don't ask that question "If the VP Xtal goes away, then what about the
> accuracy of the UT+", because I don't know!!! HI HI
>
> 73
> Doug
>
> >
> >
> > Reg.Clemens
> > reg@dwf.com
> >
> >
> > ---
> > You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> > To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

39. [tacgps] DGPS Station

From: Ronald Armstrong <roarmst@total.net>
Date: Sun, 19 Sep 1999 08:48:48 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

Message-ID: <LYR6754-40419-1999.09.19-08.00.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Where can I find instruction how to setup
a DGPS station for APRS.

Ronald VE2JOR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

40. [tacgps] Re: DGPS Station

From: "Steven R. Bible" <srbible@gate.net>
Date: Sun, 19 Sep 1999 09:12:43 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40421-1999.09.19-08.27.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ronald,

TAPR sells a DGPS reference station interface board that interfaces with the
(now discontinued) Motorola Oncore VP. The web page is

    http://www.tapr.org/tapr/html/gpsf.html

On the page is a link to the assembly/operations manual. It can help you
understand what needs to be set up for an APRS DGPS station though it does
not cover the topic completely. There are many on this list that can help
you finish the project.

- Steve, N7HPR

----- Original Message -----
From: Ronald Armstrong <roarmst@total.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Sunday, September 19, 1999 8:48 AM
Subject: [tacgps] DGPS Station

> Where can I find instruction how to setup
> a DGPS station for APRS.
>
> Ronald VE2JOR
>
>
> ---
> You are currently subscribed to tacgps as: SRBIBLE@GATE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

41. [tacgps] Re: DGPS Station

From: Ronald Armstrong <roarmst@total.net>
Date: Sun, 19 Sep 1999 12:20:16 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40449-1999.09.19-11.31.50--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the info Steve, I have the DGPS reference station board and the
Motorola Oncore VP, what I need is how to make the connetion to the TNC
I have a KPC3+ with ver. 8.3

Ronald VE2JOR 73

"Steven R. Bible" wrote:

> Ronald,
>
> TAPR sells a DGPS reference station interface board that interfaces with the
> (now discontinued) Motorola Oncore VP. The web page is
>

> http://www.tapr.org/tapr/html/gpsf.html
>
> On the page is a link to the assembly/operations manual. It can help you
> understand what needs to be set up for an APRS DGPS station though it does
> not cover the topic completely. There are many on this list that can help
> you finish the project.
>
> - Steve, N7HPR
>
> ----- Original Message -----
> From: Ronald Armstrong <roarmst@total.net>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Sunday, September 19, 1999 8:48 AM
> Subject: [tacgps] DGPS Station
>
> > Where can I find instruction how to setup
> > a DGPS station for APRS.
> >
> > Ronald VE2JOR
> >
> >
> > ---
> > You are currently subscribed to tacgps as: SRBIBLE@GATE.NET
> > To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
> >
>
> ---
> You are currently subscribed to tacgps as: roarmst@total.net
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

42. [tacgps] Re: Help please - NMEA specification

From: Allan Gibbs <allan@prescot.demon.co.uk>
Date: Sun, 19 Sep 1999 19:41:26 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40486-1999.09.19-14.14.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In a message dated Sat, 18 Sep 1999 at 15:07:00,
Doug McKinney writes.....

>For the LCD, Harper Tecnologies harper.com is selling a LCD kit. Have
>purchased one about 2.5 years ago. So, that should make the LCD integration
>easy!
>73
>Doug

I'd Written previously....

>> Personally, I'm also intrigued by the possibility of using an LCD
>> display module to show some basic information such as lat, lon, speed
>> etc.

Excellent! Thanks (again!) Doug. I'll get on to them.

Quoting Hannibal Smith in the "A" Team.... "I love it when a plan comes
together"!

Thanks folks, this is coming together nicely!

Regards,

Allan

--
Allan Gibbs - Prescot, Merseyside, U.K

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

43. [tacgps] Re: DGPS Station

From: Robert Winingham <kc5ejk@onramp.net>
Date: Mon, 20 Sep 1999 12:02:33 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40679-1999.09.20-12.14.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>what I need is how to make the connetion to the TNC
>I have a KPC3+ with ver. 8.3

Connecting the DGPS-IB is just 2 wires and one is ground.
Pin 7 of the TNC's DB-25 is ground
and pin 2 and 3 are the RS-232 (I/O pins)

The TNC I/O pin with NO voltage is the TNC receive input pin
The pin with the negative 2 to 7 volts is the TNC RS-232 output
which you don't use.

The 9 pin computer plugs also use pin 2 and 3 for I/O and pin 5 for
ground.

It is always best to use a voltmeter to check which is the xmit pin
(2 or 3).

73

----- kc5ejk@onramp.net or kc5ejk@amsat.org -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

44. [tacgps] Re: DGPS Station

From: "Doug McKinney" <Design@mt.to>
Date: Mon, 20 Sep 1999 10:13:35 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40687-1999.09.20-12.37.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Robert Winingham <kc5ejk@onramp.net>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, September 20, 1999 10:02 AM
Subject: [tacgps] Re: DGPS Station

> >what I need is how to make the connetion to the TNC
> >I have a KPC3+ with ver. 8.3
>
> Connecting the DGPS-IB is just 2 wires and one is ground.
> Pin 7 of the TNC's DB-25 is ground
> and pin 2 and 3 are the RS-232 (I/O pins)
>
> The TNC I/O pin with NO voltage is the TNC receive input pin
> The pin with the negative 2 to 7 volts is the TNC RS-232 output
> which you don't use.
>
> The 9 pin computer plugs also use pin 2 and 3 for I/O and pin 5 for
> ground.

I remember it by; Two the computer for DB9 and three is out and (GND 5), and
just the reverse for DB25 and (GND 7).

73
Doug

>
> It is always best to use a voltmeter to check which is the xmit pin
> (2 or 3).
>
>
> 73
>
>
> ----- kc5ejk@onramp.net or kc5ejk@amsat.org -----
>

>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

45. [tacgps] Re: DGPS Station

From: "Steven R. Bible" <srbible@gate.net>
Date: Mon, 20 Sep 1999 18:16:55 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40730-1999.09.20-17.27.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ronald, was Robert able to answer your question?

- Steve N7HPR

At 12:02 PM 9/20/99 -0500, you wrote:
>>what I need is how to make the connetion to the TNC
>>I have a KPC3+ with ver. 8.3
>
>Connecting the DGPS-IB is just 2 wires and one is ground.
>Pin 7 of the TNC's DB-25 is ground
>and pin 2 and 3 are the RS-232 (I/O pins)
>
>The TNC I/O pin with NO voltage is the TNC receive input pin
>The pin with the negative 2 to 7 volts is the TNC RS-232 output
>which you don't use.
>
>The 9 pin computer plugs also use pin 2 and 3 for I/O and pin 5 for
>ground.
>
>It is always best to use a voltmeter to check which is the xmit pin
>(2 or 3).

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

46. [tacgps] RE: WGS84 to UTM conversion

From: " Francisco José Millán Benayas " <francisco.millan@datatronics.es>
Date: Tue, 21 Sep 1999 11:48:52 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40811-1999.09.21-05.00.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

    I have some source code for converting from wgs84 coordenades (lat/lon)
to ED50 UTM. I am looking for data to test the accuracy of the code. Does
anybody know where can I found data, position in both formats to test the
rutines?

Thanks.
Francisco.

****
Francisco José Millán Benayas

DATATRONICS, S.A.   Dep. I+D
Tlf: 34-913 86 38 38 Fax: 34-913 73 26 46
e-mail: francisco.millan@datatronics.es
****

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

47. [tacgps] RE: WGS84 to UTM conversion

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Tue, 21 Sep 1999 06:03:47 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40815-1999.09.21-05.17.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Francisco,

I use the Geographic Calculator from Blue Marble Geographics, see
http://www.bluemarblegeo.com/products.asp?id=1. If you send me some
coordinates I will convert them so you have some reference data.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Francisco José
Millán Benayas
Sent: Tuesday, September 21, 1999 5:49 AM
To: TAPR Special Interest Group
Subject: [tacgps] RE: WGS84 to UTM conversion

Hi,

    I have some source code for converting from wgs84 coordenades (lat/lon)
to ED50 UTM. I am looking for data to test the accuracy of the code. Does
anybody know where can I found data, position in both formats to test the
rutines?

Thanks.
Francisco.

****
Francisco José Millán Benayas

DATATRONICS, S.A.   Dep. I+D
Tlf: 34-913 86 38 38 Fax: 34-913 73 26 46
e-mail: francisco.millan@datatronics.es
****

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

48. [tacgps] DGPS and TNC's

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Tue, 21 Sep 1999 10:57:23 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40850-1999.09.21-10.00.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

To: Ronald Armstrong <roarmst@total.net>

  I have been testing the DGPSIB/Oncore with a KPC3+
and an MRJ 1270 set of TNC's. From what I can tell
the KPC3+ is very picky about RTS/CTS signals on the
RS232 port. The MRJ will pull them up if they are
not connected but the KPC seems to just assumme
that the computer it is connected to has gone away
and it refuses to transmit. This is a particular
problem when connecting to a GPS unit such as the
Garmin's which don't provide CTS signals. I will
try using my KPC on the DGPS side and see if it works
there. According to the DGPS installation manual that
Steven cited it should because those signals are provided.
  Failing this you can use the TRFLOW command to the
TNC to tell it to use software flow control instead
I think but I'm still futzing with mine.
Kirk

--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)
http://www.princeton.edu/~kirk
[Attachment: vcard.vcf; text/x-vcard; 292 bytes]

49. [tacgps] Re: DGPS and TNC's

From: Robert Winingham <kc5ejk@onramp.net>
Date: Tue, 21 Sep 1999 10:35:50 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40860-1999.09.21-10.46.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>To: Ronald Armstrong <roarmst@total.net>
>
> I have been testing the DGPSIB/Oncore with a KPC3+
>and an MRJ 1270 set of TNC's. From what I can tell
>the KPC3+ is very picky about RTS/CTS signals on the
>RS232 port. The MRJ will pull them up if they are
>not connected but the KPC seems to just assumme
>that the computer it is connected to has gone away
>and it refuses to transmit. This is a particular
>problem when connecting to a GPS unit such as the
>Garmin's which don't provide CTS signals. I will
>try using my KPC on the DGPS side and see if it works
>there. According to the DGPS installation manual that
>Steven cited it should because those signals are provided.
> Failing this you can use the TRFLOW command to the
>TNC to tell it to use software flow control instead
>I think but I'm still futzing with mine.
>Kirk
>--

see
ftp://ftp.tapr.org/gps/dgps.assembly.manual.pdf

With only Ground and Data out it is going to be very hard to
use software flow control on the DGPSIB.

one trick to use when the sending device doesn't have hardware flow control
is to just jumper the input devices RS-232 port.
for a 25 pin plug jump 4 to 5 and 6 to 20. That tell the input device
all is well and keep on keeping on.

If might be a good idea to post a diagram of just the I/O part
of the DGPSIB circuit.

75

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

50. [tacgps] Oncore Software difficulty

From: G Sanders <gsanders1@bigfoot.com>
Date: Tue, 21 Sep 1999 13:00:59 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40862-1999.09.21-12.12.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I just received my new Oncore (one of the last TAPR had), and
it works fine, but I'm having difficulty getting the software
that comes with it to run. This is the Motorola Controller software.

When I install it (following the instructions, no less!) and

run it, it hangs after running the Marknet gps.mrk program.

I've tried it on 2 different PC's - my P-550 and an old DOS - only
386 I use for programming chips. Same symptom on both machines - I
execute the "GPS" batch file, and it locks up the computer,
requiring a reboot.

I've contacted the TAPR office, and a new disk is being sent
out, but I wonder if anyone has any other ideas?

(By the way, I can't believe how fast the Oncore locks,
compared to my old GPS-20. When I powered it up the first
time, the 1PPS light on my board began flashing within 5
seconds from a cold start!)

Gary Sanders   WB0BZR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

51. [tacgps] Re: Oncore Software difficulty

From: John Franke <j.m.franke@larc.nasa.gov>
Date: Tue, 21 Sep 1999 13:14:43 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40863-1999.09.21-12.26.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Gary Sanders   WB0BZR wrote:
>
>(By the way, I can't believe how fast the Oncore locks,
>compared to my old GPS-20. When I powered it up the first
>time, the 1PPS light on my board began flashing within 5
>seconds from a cold start!)

Unlike the GPS20, the Oncore puts out the 1PPS signal whether or not it is
locked. When locked, the 1PPS is within the stated accuracy to UTC, when
not locked the 1PPS is derived from the internal clock and most likely not
in step with UTC. When the board does lock, my units produce an extended
1PPS pulse followed by the normal length 1PPS pulses.

John

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

52. [tacgps] Re: Oncore Software difficulty

From: clark@tomcat.gsfc.nasa.gov (Dr Thomas A Clark (W3IWI))
Date: Tue, 21 Sep 99 17:22:58 UTC
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40868-1999.09.21-12.41.35--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The problem is that the MARK utility tests to see what version od MessDOS
you are using. That software is a 6+ year old antique. The fix is to
use the Microsoft SETVER utility -- in case you forgot about it, here
is the command syntax:

> Sets the version number that MS-DOS reports to a program.
>
> Display current version table: SETVER [drive:path]
> Add entry: SETVER [drive:path] filename n.nn
> Delete entry: SETVER [drive:path] filename /DELETE [/QUIET]
>
>   [drive:path]   Specifies location of the SETVER.EXE file.
>   filename   Specifies the filename of the program.
>   n.nn   Specifies the MS-DOS version to be reported to the program.
>   /DELETE or /D   Deletes the version-table entry for the specified program.
>   /QUIET   Hides the message typically displayed during deletion of
>   version-table entry.
>

Alternate fix #2 is to just take the MARK/REL statements out of the
batch file.

Alternate #3, assuming you still want to run in old MessDOS, is to use
my TAC SHOWTIME code.

Alternate #4, assuming you are really using a modern computer with a
32-bit WINDOZE (95/98/NT) is to use Rick's TAC32 program available on
the TAPR web site or from http://www.cnssys.com

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

53. [tacgps] Re: Oncore Software difficulty

From: clark@tomcat.gsfc.nasa.gov (Dr Thomas A Clark (W3IWI))
Date: Tue, 21 Sep 99 17:30:40 UTC
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40870-1999.09.21-12.46.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The newer ONCOREs have a software option to "kill" the 1PPS when
unlocked (or when TRAIM fails). Otherwise, the 1PPS pulse is present
even when not locked. You can see how the 1PPS locks up in the file
ftp://aleph.gsfc.nasa.gov/GPS/totally.accurate.clock/tac-1sec.gif
on my FTP file server. That plot was made on an old 6-channel PVT-6,
but it is equally applicable to the newer ONCOREs

Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

54. [tacgps] Re: Oncore Software difficulty

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 21 Sep 1999 13:59:22 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40873-1999.09.21-13.10.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

HI, All
 I also just received a VP from the TAPR "stash". I have the same
problems with the software. I went a little farther. I have an older version
of the Mot software, 9.0 I think. Anyway, I substituted each of the programs
in the "GPS.BAT" file with their older versions. In every case the newer
version of the program hung my machine. I think they have a bad master,
or problems in copying.

 Jim Korenz N8PXW

bounce-tacgps-5599@lists.tapr.org on 09/21/99 01:04:56 PM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Oncore Software difficulty

I just received my new Oncore (one of the last TAPR had), and
it works fine, but I'm having difficulty getting the software
that comes with it to run. This is the Motorola Controller software.

When I install it (following the instructions, no less!) and
run it, it hangs after running the Marknet gps.mrk program.

I've tried it on 2 different PC's - my P-550 and an old DOS - only
386 I use for programming chips. Same symptom on both machines - I
execute the "GPS" batch file, and it locks up the computer,
requiring a reboot.

I've contacted the TAPR office, and a new disk is being sent
out, but I wonder if anyone has any other ideas?

(By the way, I can't believe how fast the Oncore locks,
compared to my old GPS-20. When I powered it up the first
time, the 1PPS light on my board began flashing within 5

seconds from a cold start!)

Gary Sanders   WB0BZR

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

55. [tacgps] Re: Oncore Software difficulty

From: clark@tomcat.gsfc.nasa.gov (Dr Thomas A Clark (W3IWI))
Date: Tue, 21 Sep 99 19:16:48 UTC
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40890-1999.09.21-14.31.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Again -- at the MessDOS prompt, type SETVER xxxx.exe 5.0 for each
of the programs, and then reboot the computer.

Tom\

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

56. [tacgps] Re: Oncore Software difficulty

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 21 Sep 1999 16:18:21 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40903-1999.09.21-15.29.40--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

HI,
 Been there, done that, it doesn't work....
  JimK

bounce-tacgps-5599@lists.tapr.org on 09/21/99 03:21:33 PM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Re: Oncore Software difficulty

Again -- at the MessDOS prompt, type SETVER xxxx.exe 5.0 for each
of the programs, and then reboot the computer.

Tom\

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

57. [tacgps] Re: Oncore Software difficulty

From: G Sanders <gsanders1@bigfoot.com>
Date: Tue, 21 Sep 1999 20:13:44 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40946-1999.09.21-19.25.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

John Franke wrote:
>

> Unlike the GPS20, the Oncore puts out the 1PPS signal whether or not it is
> locked.

Thanks for the tip - I was wondering if it was too good to be true!

It's still considerably faster than the old Oncore.

Gary   WB0BZR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

58. [tacgps] Re: Oncore Software difficulty

From: G Sanders <gsanders1@bigfoot.com>
Date: Tue, 21 Sep 1999 20:28:27 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40950-1999.09.21-19.39.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Dr Thomas A Clark (W3IWI)" wrote:
>
> The problem is that the MARK utility tests to see what version od MessDOS
> you are using. That software is a 6+ year old antique. The fix is to
> use the Microsoft SETVER utility -- in case you forgot about it, here
> is the command syntax:

--SNIP--

Thanks for the suggestions.

Still no go. Same symptom. I put all four exe's in setver (and ran
setver to make sure they were actually there with reference to DOS
ver 5.00. They were.). I also used the mem /C command to verify that
setver was actually loaded in memory by my config file before trying
the GPS batch (it was).

Short of actually having bad files, I'm out of ideas, until the new
disk comes from TAPR.

> Alternate fix #2 is to just take the MARK/REL statements out of the
> batch file.

I tried this also - no go - same symptom.

> Alternate #4, assuming you are really using a modern computer with a
> 32-bit WINDOZE (95/98/NT) is to use Rick's TAC32 program available on
> the TAPR web site or from http://www.cnssys.com

This is what I'm doing now with the faster machine, with the 30 day
trial version.

I was wondering if the Motorola DOS program offers any more Oncore
configurability than TAC32, or if TAC32 pretty well covers everything
the DOS program does.

Gary Sanders   WB0BZR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

59. [tacgps] TAC32 Suggestion

From: G Sanders <gsanders1@bigfoot.com>
Date: Tue, 21 Sep 1999 20:52:27 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40951-1999.09.21-20.03.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've just started using TAC32 with my shiny new Oncore, and
it does it's job well.

There's one thing I miss with my old Garmin GPS-20. I wrote
a simple VB application that (barely) runs every time I boot
my PC, and after verifying a valid fix, sets the PC's clock.

Since I used the Garmin with Brooks Shera's GPS controller,
it ran continuously, so when the PC would boot, it would grab
a few NMEA sentences and set the clock.

I suspect I'll want to run the Oncore in the binary mode so I
can take advantage of its DGPS and other functions, which means
a drastic rewrite of my little program, and since I'm a lousy
programmer to begin with, the prospect is more than a little
daunting.

It seems that all the binary decoding and clock setting
routines are already implemented in TAC32 - all it would need
is another operational mode. When this mode is selected, a
shortcut to TAC32 would be placed in the Startup Folder, and it
would get valid time, set the clock and terminate.

I realize it's possible to just put TAC32 in the Startup folder
as-is, and have it set the clock periodically using one of the
current setting options, but the ability to have it shut down
after clock setting would seem to be desirable to save on
resources.

Any comments?

Gary Sanders   WB0BZR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

60. [tacgps] Re: TAC32 Suggestion

From: "Steve Sampson" <ssampson@www.usa-site.net>
Date: Tue, 21 Sep 1999 21:23:37 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-40984-1999.09.21-21.36.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I realize it's possible to just put TAC32 in the Startup folder
>as-is, and have it set the clock periodically using one of the
>current setting options, but the ability to have it shut down
>after clock setting would seem to be desirable to save on
>resources.
>
>Any comments?

I tend to set things up and forget them. I use the TAC32 on an
old machine, and that's all it runs. The idea being, that I don't
want to mess up the DGPS or GPS based clock. There's an
used computer store in town, and you can buy all sorts of junk
486 machines.

Then I can play RedNeck Rampage on my main machine
without messing anything up... :-)

Steve

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

61. [tacgps] Re: Oncore Software

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Wed, 22 Sep 1999 03:44:05 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41022-1999.09.21-22.56.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

G Sanders wrote:
> [snip]
> I was wondering if the Motorola DOS program offers any more Oncore
> configurability than TAC32, or if TAC32 pretty well covers everything
> the DOS program does.

Sorry the SETVER trick didn't work for you -- it worked fine for me
in MessDOS 6.0, 6.2, PCDOS 7.0 and even early W95 world. Haven't
tried to use it for a couple of years.

Rick has done a good job in keeping up with all the commands as Motorola
has augmented the product (the "professional" versions of TAC32 already
support the new M-12 command sets).

I use TAC32+ (which also supports HP53131A time-interval counters and
lets the Windoze PC act as a Stratum 1 xntpd time server) at a number
of sites around the world and just leave it running all the time.

Back to an earlier thread -- there were some questions last week about
the new Moto M12 receiver. In chatting with Rick, I learned that he has
seen a "beta" M12 and the MCORE development system (used to develop
new code for the M2003 RISC CPU used in the M12), and he as updated
his "professional" TAC32 versions (TAC32Plus and SYNTAC) with the new
M12 commands. I gather that the "beta" M12 does have a position hold
capability, even though the documentation indicates that it doesn't.
It does produce a 1PPS signal, but Rick hasn't yet tried to see how
good it is. Synergy has done a 'quickie' adaptor board so that the
M12 can plug into a VP/UT/GT socket. The pinout is different, and
the M12 runs on 3.3v (vs 5.0v for the older receivers). I gather
that there are only a few 'beta' units in the world. Rick hinted
that if there were specific "What Did The Do?" questions posted
here, he might be able to answer them (without offending the
lawyers?).

world

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

62. [tacgps] Re: Oncore Software

From: Reg Clemens <reg@dwf.com>
Date: Wed, 22 Sep 1999 00:44:25 -0600 (MDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41053-1999.09.22-01.56.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Back to an earlier thread -- there were some questions last week about
> the new Moto M12 receiver.
> ...
> I gather that there are only a few 'beta' units in the world.

Is there some indication of when `real' production of these units will start?

                                        Reg.Clemens
                                        reg@dwf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

63. [tacgps] Network Clock

From: Charles Dapples <ccdapple@wtp.net>
Date: Sat, 25 Sep 1999 08:36:38 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41464-1999.09.25-09.47.59--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
    Does anyone know of a program like TAC32 that will run
on
a Linux(Unix) network so that all the computers on the
network
can set their clocks to the GPS time signals?

--

Chris / KF7KN

--
+------------------------------+------------------------------+

| e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507

|
+------------------------------+------------------------------+

| kf7kn@amsat.org | Fax: (406)
446-1607 |
+------------------------------+------------------------------+

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

64. [tacgps] RE: Network Clock

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sat, 25 Sep 1999 11:32:35 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41466-1999.09.25-10.44.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Chris,

If you have one Windows computer on the network, Tac32Plus has a built-in
SNTP Server. You can use that to set the time on all other machines on the
network regardless of hardware or operating system. See
http://www.cnssys.com/cnsclock/Tac32PlusSoftware.html.

Rick
WB2TNL

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Charles Dapples
Sent: Saturday, September 25, 1999 10:37 AM
To: TAPR Special Interest Group
Subject: [tacgps] Network Clock

Hi All,
    Does anyone know of a program like TAC32 that will run
on
a Linux(Unix) network so that all the computers on the
network
can set their clocks to the GPS time signals?

--

Chris / KF7KN

--
+------------------------------+------------------------------+

| e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507
|
+------------------------------+------------------------------+

| kf7kn@amsat.org | Fax: (406)
446-1607 |
+------------------------------+------------------------------+

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

65. [tacgps] Re: Network Clock

From: Randolph Bentson <bentson@grieg.holmsjoen.com>
Date: Sat, 25 Sep 1999 09:08:08 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41468-1999.09.25-11.19.24--lyris.tacgps#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Implementations of NTP have, for some time now, had support for NMEA clocks. NTP also benefits from network connections to other clock sources. Version 3.93 is in Red Hat 6.0 with the name xntp and you can get 4.xx from http://www.eecis.udel.edu/~ntp/ . The trouble is that NMEA alone has too much jitter. This is because the character stream isn't precisely synchronized to the clock tick. (There's also support for other clock types, including some specific GPS models.)

Although the Pulse Per Second support is still rough, you can apply patches from Ulrich Windl to change NTP and the Linux kernel for PPS. Look for PPSkit on the net--I think 7.1 is the latest. (I must confess, I'm having trouble with this because the patches aren't quite clean. The trick is with how the tick is passed through the kernel. Here's a chance for you to fix things and contribute back to the community.)

What's missing, with respect to TAC32, is all the rest which keeps track of satellite positions and signals, etc. Another daemon could be written to do this.

Randolph Bentson

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

66. [tacgps] Re: Network Clock

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Sat, 25 Sep 1999 16:41:46 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41469-1999.09.25-11.53.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Chris -- Rick gave you the pointer to his TAC32Plus software.
If you want to test/prove that it works, try this xntp timehost:

    tac.ggao.nasa.gov = 192.225.79.116

This is a pretty vanilla Windoze 98 host (Pentium II at 350 MHz in a stock Dell box) that is running a TAC that I use for time synch and is also logging an Ashtech Z-12 in real-time at my site at the Goddard Geophysical & Astronomical Observatory (GGAO).

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

67. [tacgps] Re: Network Clock

From: "Richard M. Hambly" <rick@cnssys.com>
Date: Sat, 25 Sep 1999 13:38:04 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41473-1999.09.25-12.49.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Tac32Plus provides an SNTP server that IS synched to the 1PPS.

The various implementations of NTP are reliant on kernel support for 1PPS, which is often unavailable. The Linux PPS kit is not fully compatible with the new Oncore binary mode driver for NTP V4.x because the two authors are using different API specs and neither will give an inch on this issue. I have all this code running (sort of) on my Linux server driven by a CNS Clock (Oncore VP).

Thus the recommendation to use Tac32Plus, if possible. As W3IWI pointed out in a separate e-mail, this is running at NASA's Goddard Geophysical & Astronomical Observatory (GGAO) and can be accessed by any NTP client (or server) at:
    tac.ggao.nasa.gov = 192.225.79.116

Some users have asked why I don't write a Unix/Linux version of Tac32/Tac32Plus. The answer is simple - the market is to small. So what is next after Tac32? How about a machine and operating system independent implementation where the Tac32 "engine" is in silicon with the Oncore and the "console" is any Web browser?

Rick, WB2TNL
http:/www.cnssys.com/

-----Original Message-----
From: bounce-tacgps-5621@lists.tapr.org
[mailto:bounce-tacgps-5621@lists.tapr.org]On Behalf Of Randolph Bentson
Sent: Saturday, September 25, 1999 12:08 PM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Network Clock

Implementations of NTP have, for some time now, had support for NMEA
clocks. NTP also benefits from network connections to other clock
sources. Version 3.93 is in Red Hat 6.0 with the name xntp and you
can get 4.xx from http://www.eecis.udel.edu/~ntp/ . The trouble is
that NMEA alone has too much jitter. This is because the character
stream isn't precisely synchronized to the clock tick. (There's also
support for other clock types, including some specific GPS models.)

Although the Pulse Per Second support is still rough, you can apply
patches from Ulrich Windl to change NTP and the Linux kernel for PPS.
Look for PPSkit on the net--I think 7.1 is the latest. (I must confess,
I'm having trouble with this because the patches aren't quite clean.
The trick is with how the tick is passed through the kernel. Here's
a chance for you to fix things and contribute back to the community.)

What's missing, with respect to TAC32, is all the rest which keeps
track of satellite positions and signals, etc. Another daemon could
be written to do this.

Randolph Bentson

You are currently subscribed to tacgps as: RICK@CNSSYS.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

68. [tacgps] Re: Network Clock

From: Reg Clemens <reg@dwf.com>
Date: Sat, 25 Sep 1999 12:38:22 -0600 (MDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41480-1999.09.25-13.50.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Implementations of NTP have, for some time now, had support for NMEA
> clocks. NTP also benefits from network connections to other clock
> sources. Version 3.93 is in Red Hat 6.0 with the name xntp and you
> can get 4.xx from http://www.eecis.udel.edu/~ntp/ . The trouble is
> that NMEA alone has too much jitter. This is because the character
> stream isn't precisely synchronized to the clock tick. (There's also
> support for other clock types, including some specific GPS models.)
>
Yes, the current version of PPSkit is PPSkit-0.7.1.tar.gz, and it is
available from all the usual places. Its home is at
        ftp://pcphy4.physik.uni-regensburg.de/pub/wiu09524/PPS

The current version of NTP is ntp-4.0.98a.tar.gz, Its home is
        ftp://ftp.udel.edu/pub/ntp/testing
although the address given above is also ok (and there is a web site out
there too).

You DEFINATELY want to go out and get the NTP v4 source rather than using
what comes with your Linux distribution. Other than being more current,
all of the drivers dont get built in the distributed (precompiled)
versions of NTP.

>
> Although the Pulse Per Second support is still rough, you can apply
> patches from Ulrich Windl to change NTP and the Linux kernel for PPS.
> Look for PPSkit on the net--I think 7.1 is the latest. (I must confess,
> I'm having trouble with this because the patches aren't quite clean.
> The trick is with how the tick is passed through the kernel. Here's

> a chance for you to fix things and contribute back to the community.)
>

AS FOR ` Although the Pulse Per Second support is still rough', THIS IS
HARDLY THE CASE.

The ONCORE driver in v4.x has been running in its current form for 10-11
months with only minor tweeks. Depending on the speed of the PC you run
it on, it should be able to keep time accurate to 10's to 100's of ns of the
PPS pulse. Whatever the case, definately to a fraction of a us.

Hopefully Ulrich Windl will submit the PPSkit stuff as a patch to the 2.2.x
and 2.3.x Linux kernels soon, so that the patchkit wont be necessary.
(Summer vacation is over, Ill start bugging him again). The mention above
of the patch kit, being `not quite clean' is due to the sources changing
out from under the patch as the sources go from one revision number to the
next,- the patch kit will say what version of the linux kernel sources it
was made against, and USUALLY there are only minor changes needed to get
it to work against the next one or two...

The current patch is for Linux-2.2.11, but it patches 2.2.12 with only
3 failures. Two are in arch/ppc (viz not arch/i386) so can be ignored
by PC owners, and the third failure is in renaming version to include
-NANO, (see the *.rej file), so you can fix this even if you are not
familiar with the code.

>
> What's missing, with respect to TAC32, is all the rest which keeps
> track of satellite positions and signals, etc. Another daemon could
> be written to do this.
>
> Randolph Bentson
>
Yea, that would be nice, a couple of people have written things like
that, but none have ever seen the light of day...

                                        Reg.Clemens
                                        reg@dwf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

69. [tacgps] Re: Network Clock

From: "Art Neilson, AH6PZ" <art@hawaii.rr.com>
Date: Sat, 25 Sep 1999 10:26:33 -1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41509-1999.09.25-15.38.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I've got a Motorola UT+ Oncore/TAPR TAC2 combo in a homebrewed enclosure
connected to a PC running FreeBSD 3.3-Stable. FreeBSD has an OS kernel
PLL sync routine which syncs to the 1 pps signal on pin 10 of the DB-9.
Also run NTP-4.0.93a which is the Network Time Protocol daemon version 4,
found at www.ntp.org. The NTP 4 distribution has refclock code for the
Oncore and works great. I have all the PC's on my local ethernet LAN
syncronized to my FreeBSD box (see www.freebsd.org for info on the OS)

73's!!

At 08:36 AM 09/25/1999 -0600, you wrote:
>Hi All,
>   Does anyone know of a program like TAC32 that will run
>on
>a Linux(Unix) network so that all the computers on the
>network
>can set their clocks to the GPS time signals?
>
>--
>
>Chris / KF7KN
>
>--
>+------------------------------+-------------------------------+
>
>| e-mail: ccdapple@wtp.net | Telephone: (406) 446-1507

>|
>+------------------------------+------------------------------+
>
>| kf7kn@amsat.org | Fax: (406)
>446-1607 |
>+------------------------------+------------------------------+
>
>
>
>
>---
>You are currently subscribed to tacgps as: art@hawaii.rr.com
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
--
```
   __
  /  )    _/_  It is a capital mistake to theorise before one has data.
 /--/ __   /   Insensibly one begins to twist facts to suit theories,
/  (_/ (_<__   Instead of theories to suit facts.
                    -- Sherlock Holmes, "A Scandal in Bohemia"
```
Arthur W. Neilson III, AH6PZ
Bank of Hawaii Tech Support
art@hawaii.rr.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

70. [tacgps] Re: Network Clock

From: chrise@n0jcf.com (Chris Elmquist)
Date: Sat, 25 Sep 1999 18:59:39 -0500 (CDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41518-1999.09.25-19.12.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Richard M. Hambly wrote:

> Some users have asked why I don't write a Unix/Linux version of
> Tac32/Tac32Plus. The answer is simple - the market is to small.

bah! The marketing department is too small :-)

Linux is making huge inroads in the high availability / carrier-class
telecom markets. Very large telecom companies are dumping their WinNT/Win20??
programs and deploying Linux based open server architechures instead.
These people can't tolerate the downtime and unreliability that Windows
affords them.

Motorola just recently announced their plans to support Linux extensively
on their compactPCI embedded system platforms...

The company I work for expects to move millions of dollars of remote
access products all intended to operate on Linux based platforms in
high availability network infrastructures. Surely these people would
like accurate time stamping on their networks without mixing the
less than high availability Microsloth products into the pot.

"Build it... and they will come"

Chris

--
Chris Elmquist
chrise@n0jcf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

71. [tacgps] M12 Receiver photos

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Mon, 27 Sep 1999 02:18:46 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-41699-1999.09.26-21.30.24--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There has been some interest here in the new Motorola M12 receiver,
which we hope will inherit all the ONCORE capabilities. As I noted
last week, Rick has a "beta" M12 OEM board, plus a Axiom MCORE
development kit on loan to support software development. I was
at Rick's today and had my camera with me, so I took some High-Res
photos.

So you can see what the hardware looks like, I just posted three
photos on my ISP's web site at URL

          http://www.clark.net/pub/tac/m12.htm

[When you connect to this URL, you see some compressed thumbnail
pictures. The real photos download when you click on the smaller
thumbnails and are 300-400 kbytes in size. The photos can be
downloaded from URL ftp.clark.net/pub/tac -- the other pictures
on this site are of AMSAT's P3D satellite in July and can be seen
at http://www.clark.net/pub/tac]

The top two pictures are of the M12 board front & back. The big
white areas are paper labels that cover some of the chips. The MMCX
RF connector is to the right in both photos. The think that looks like
a small wrist watch in the lower right corner of the top is a socketed
backup battery. The small dual-row power+I/O connector is seen on the
top-side photo, in the upper left-hand corner above the big chip.
The coin provides a reference scale. Yes, the board is really
small!

At Rick's, I did see the M12 board running with TAC32Plus,
tracking satellites and producing a 1PPS signal. Rick had
it driving a TAC-2 equipped with his IRIG time-code generator
add-on board.

  -

The third photo is of Axiom's MCORE development system, which is
described in some detail on Motorola's MCORE M2003 web site. Near
the center of this board is a stack of smaller boards, topped off
by the RF & correlator deck (see the words "PowerStrike"). The
M2003 CPU is on one of the middle layers. The two EPROMS in the
lower-left corner are the M2003 debugger, and above them (also
occupying two 32-pin sockets) is a flash EPROM. I didn't put a
scale on this photo, but the EPROMs are 28-pin parts and hence
~1.5 inches in size. The overall board is about 8" x 6" in size.

The MCORE development board is obviously intended for the
development of M12 code, and it appears that the intention is that
the serious (ab)user will be able to provide some customization of
the firmware -- but the detail of hooks & interfaces only exist
on the MCORE web site in the guise of a big (~120 page) PDF file,
which describes both the hardware and some of the software
details. (Yes, that was a vague statement -- but it reflects
the vagueness of my understanding of the details of the M12/
MCORE!).

73, Tom

FYI -- the camera that was used for these photos is a Nikon
CoolPix 950 with 1200x1600 pixels. The ~400 kbyte JPEG pictures
are ~10:1 compressed from their original raw ~6 megabyte size.
The macro pictures were illuminated with a desk flourescent lamp --
the ones I did with a flash had too much glare.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

72. [tacgps] Garmin RTCM problems with packet headers

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 28 Sep 1999 08:51:28 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-42089-1999.09.28-08.03.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
 Just some correspondence with the Garmin folks about packet headers

that
I thought woul;d be of interest.
 JimK

> -----Original Message-----
> From: JIM KORENZ [SMTP:jfkorenz@goodyear.com]
> Sent: Tuesday, September 21, 1999 2:20 PM
> To: techsupp@garmin.com
> Subject: DGPS RTCM 104 sentences
>
> Hi,
> I am a ham, amateur radio operator, N8PXW, and I am trying to use a
> Garmin GPS III
> with the TAPR DGPSIB board. The DGPS base station is a Motorola VP GPS
> unit
> attached to
> the TAPR board. This combination sends out RTCM messages that the Garmin
> uses
> to enter
> the DGPS mode. A "hard-wire" connection (i.e. RS 232 serial cable) between
> the
> DGPS base
> and the GPS III works fine. The problem comes in when I use a packet radio
> "connection"
> to transmit the DGPS correction messages by an RF link. The RTCM data gets
> to
> the Garmin
> OK. I verified this with the "RTCMON" program. But, the correction data
> has
> ASCII "header"
> appended in front of it. (i.e. DGPS de N8PXW>(RTCM correction
> data)<CR><LF>).
> The Garmin
> GPS III ignors this data completely. I verified this by inserting
> "headers" in
> the data stream
> while the units were tied together with the RS 232 cable. My question is
> this.
> Do you have a
> "patch" or "upgrade" to the firmware to fix this problem? Do you consider
> this
> a problem
> at all ? I have an older Magellan XL unit and it works fine with this data
> stream. I would
> like to buy a GPS III plus unit with the map CD, but if I can't use the
> DGPS
> base station to
> get greater accuracy, I will buy another unit that is not so "picky" about
> the
> RTCM data
> stream. I also tried a Garmin 45, and had the same results.
> Thanks for your time,
> Jim Korenz

Sorry for the delay

GARMIN units as you noted, do accept a Standard RTCM SC 104 format sentence.
It would like in this case, your equipment is deviating from the standard
message which would cause the unit to form an invalid sentence structure.

If this data is ever changed in our unit, I would not expect this to be an
immediate release. I apologize our unit could not fit your need.

Thank you and best Regards,

Stacy Derks
Product Support Specialist

GARMIN International
1200 E. 151st Street
Olathe, KS 66062 USA
http://www.garmin.com/

tel. 800/800.1020
      913/397.8200

fax. 913/397.0836

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

73. [tacgps] Re: Garmin RTCM problems with packet headers

From: "Steven R. Bible" <srbible@gate.net>
Date: Tue, 28 Sep 1999 20:21:22 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-42189-1999.09.28-19.31.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:51 AM 9/28/99 -0400, you wrote:
>Hi All,
> Just some correspondence with the Garmin folks about packet headers
>that
>I thought woul;d be of interest.
> JimK

[snip]

>Sorry for the delay
>
>GARMIN units as you noted, do accept a Standard RTCM SC 104 format sentence.
>It would like in this case, your equipment is deviating from the standard
>message which would cause the unit to form an invalid sentence structure.
>
>If this data is ever changed in our unit, I would not expect this to be an
>immediate release. I apologize our unit could not fit your need.

Hmmm. To bad Garmin's answer is vauge. Garmin products are the only
products that I know that will not tolerate the packet address header
information. Apparently Garmin's method of detecting the RTCM header is
after a period of quite or perhaps after CR/LF.

Jim, I'm sure you know that the newer Kantronics and PacComm TNC's have a
command to turn the header info off. I have also programmed a PIC to
"filter" the header info off. Two prototypes are in use and I haven't
moved to make it available as not many have asked for it.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

74. [tacgps] Re: Garmin RTCM problems with packet headers

From: Robert Winingham <kc5ejk@onramp.net>
Date: Tue, 28 Sep 1999 20:04:33 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-42195-1999.09.28-20.16.55--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I have also programmed a PIC to
>"filter" the header info off. Two prototypes are in use and I haven't
>moved to make it available as not many have asked for it.

That software and the small unit, I SAW AT DCC, that connects to a comm cable
and was used to convert Earthmake binary data to NMEA is just what we need.

I was thinking of making that my first Pic project :-)

Steven Bible had us all fired up about PIC projects as we
attended a very informative PIC seminar the last day of DCC.

73

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

75. [tacgps] Garmin RTCM problems with packet headers

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Wed, 29 Sep 1999 14:39:18 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-42311-1999.09.29-13.42.12--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,
  I have been able to avoid the Garmin RTCM restriction by
using a TNC that removes the header or running the TNC's
in Transparent mode (in which case there are no headers at
all by definition). I am wondering...have some of you
succeeded receiving unconnected rtcm packets and not
using transparent mode? I kept having trouble with the
TNC's locking up or the gps units not recognizing the rtcm
data because the tnc filtered out a byte here or there..
A complete dump of the tnc configuration for DGPS use on
this list for unconnected mode would be gladly received!
Kirk

--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)
http://www.princeton.edu/~kirk
[Attachment: vcard.vcf; text/x-vcard; 292 bytes]

76. [tacgps] Re: Garmin RTCM problems with packet headers

From: Doug Bade <doug@clecom.com>
Date: Wed, 29 Sep 1999 15:02:06 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-42317-1999.09.29-14.13.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, I use converse mode to send, and receive. MHeader off, and the main
problem is flow control interruption. Start and Stop need to also be set
for $00. these are what usually interrupts the tnc and freezes it causing
data stop. also make sure the 8bitconv is not filtering the 8th bit. Other
than that all works for me. Doug Bade KB8GVQ

At 02:39 PM 9/29/99 -0400, you wrote:
>Hi,
> I have been able to avoid the Garmin RTCM restriction by
>using a TNC that removes the header or running the TNC's
>in Transparent mode (in which case there are no headers at
>all by definition). I am wondering...have some of you
>succeeded receiving unconnected rtcm packets and not
>using transparent mode? I kept having trouble with the
>TNC's locking up or the gps units not recognizing the rtcm
>data because the tnc filtered out a byte here or there..
>A complete dump of the tnc configuration for DGPS use on
>this list for unconnected mode would be gladly received!
>Kirk
>
>--
>Kirk Alexander,
>Manager
>Multimedia Engineering Computation Atelier (MECA)
>School of Engineering and Applied Science
>E-430 Engineering Quadrangle
>Princeton University
>Princeton, N.J. 08544-5263
>(609) 258-5420 (tel)
>(609) 258-6744 (fax)
>kirk@princeton.edu (email)
>http://www.princeton.edu/~kirk

Doug Bade
  doug@clecom.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

77. [tacgps] Re: Garmin RTCM problems with packet headers

From: Jeff Vollin <barnie@flash.net>
Date: Wed, 29 Sep 1999 21:45:33 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-42360-1999.09.29-23.56.38--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I run DGPS and APRS on the same frequency. The only way I
have found to do that reliably is to use a dual-port TNC. The
Paccomm PicoPacket with 2 serial ports does this nicely. Any
UNPROTO packets that are addressed to RTCM will be routed
to the GPS. The NMEA data from the GPS is stored and sent out
at the rate set by the user. All data received with addresses other
than RTCM are routed to the first serial port so a computer running
APRS and connected to the first serial port will function normally.
I could not find this info in the documentation, but Paccomm told
me about it when I asked. The PicoPacket form factor is also good
for a mobile tracker (corrected with DGPS).

The source of the RTCM packets is my TAPR DGPSIB station
at home. What I have been unable to do is run APRS and the
reference station using one radio and one TNC at home. I think
the only way to do this is to build the support into WinAPRS and
run the TNC in KISS mode. I have spoken to Keith Sproul about
this and he is looking at it as an addition. I am sure it would help the
decision to do this if others voiced interest.

Jeff Vollin
barnie@flash.net

Kirk D. Alexander wrote:

> Hi,
> I have been able to avoid the Garmin RTCM restriction by
> using a TNC that removes the header or running the TNC's
> in Transparent mode (in which case there are no headers at
> all by definition). I am wondering...have some of you
> succeeded receiving unconnected rtcm packets and not
> using transparent mode? I kept having trouble with the
> TNC's locking up or the gps units not recognizing the rtcm
> data because the tnc filtered out a byte here or there..
> A complete dump of the tnc configuration for DGPS use on
> this list for unconnected mode would be gladly received!
> Kirk
>
> --
> Kirk Alexander,
> Manager
> Multimedia Engineering Computation Atelier (MECA)
> School of Engineering and Applied Science
> E-430 Engineering Quadrangle
> Princeton University
> Princeton, N.J. 08544-5263
> (609) 258-5420 (tel)
> (609) 258-6744 (fax)
> kirk@princeton.edu (email)
> http://www.princeton.edu/~kirk
>
> ----------
>
> Kirk Alexander <kirk@princeton.edu>
> Manager
> Multimedia Engineering Computation Atelier - SEAS
>
> Kirk Alexander
> Manager <kirk@princeton.edu>
> Multimedia Engineering Computation Atelier - SEAS HTML Mail
> Netscape Conference Address
> Netscape Conference DLS Server
> Additional Information:
> Last Name Alexander
> First Name Kirk

> Version 2.1

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

October 1999

Original source file: tacgps.9910
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9910

1. [tacgps] Oncore DOS Control Program problem

From: "Craig Young" <craig_young@xtra.co.nz>
Date: Tue, 12 Oct 1999 14:41:40 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44487-1999.10.11-20.53.30--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I installed the supplied Motorola Oncore software to my hard drive
and when I run the GPS.BAT program the PC immediately beeps
the internal speaker continuously, the only way to stop it is to
shutdown the PC.

I am using a 486 with 8MB RAM running DOS 6.2, I don't have
windows on this machine.

I manually stepped through the batch file and it is the first line that
causes the problem: marknet.exe

I looked on the internet for any new versions of the software (I am
running installation disk 1.0) and couldn't find anything from TAPR
or Motorola. I then searched TurboPower for Marknet and also
nothing.

Does anyone know why the program will not run?

Thanks,

Craig Young
New Zealand

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] RE: Oncore DOS Control Program problem

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Tue, 12 Oct 1999 00:00:36 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44502-1999.10.11-23.12.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
        I have some info for you. First, "marknet" is used to "tag" the
interrupts used so the next program loaded can be unloaded by "relnet"
or like. You can pull it (and the matching "relnet") from the batch
file. There is one catch however.

        If you do that, you will not be able to run anything using comm ports
after running "gpscomms" unless you reboot. Also, if you run
"gpscomms" more than once, you will finish by crashing. "gpscomms" is
used by gps.exe to talk to the comm ports.

        If you do not mind running gpscomms only once and rebooting when
finished, you can pull "marknet" and "relnet"... It may get you
working. A better option, if you can run a win95 program, use TAC32.
It will do a great job at configuring your GPS...

                Martin VE2MRX

[E_O_MSG]

mailto:ve2mrx@amsat.org

Martin VE2MRX
Beloeil, Quebec, Canada
FN35jn

-----Original Message-----
From: bounce-tacgps-5545@lists.tapr.org
[mailto:bounce-tacgps-5545@lists.tapr.org]On Behalf Of Craig Young
Sent: Monday, October 11, 1999 21:42
To: TAPR Special Interest Group

Subject: [tacgps] Oncore DOS Control Program problem

I installed the supplied Motorola Oncore software to my hard drive
and when I run the GPS.BAT program the PC immediately beeps
the internal speaker continuously, the only way to stop it is to
shutdown the PC.

I am using a 486 with 8MB RAM running DOS 6.2, I don't have
windows on this machine.

I manually stepped through the batch file and it is the first line
that
causes the problem: marknet.exe

I looked on the internet for any new versions of the software (I am
running installation disk 1.0) and couldn't find anything from TAPR
or Motorola. I then searched TurboPower for Marknet and also
nothing.

Does anyone know why the program will not run?

Thanks,

Craig Young
New Zealand

You are currently subscribed to tacgps as: VE2MRX@INAME.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] Re: Oncore DOS Control Program problem

From: "Doug McKinney" <Design@mt.to>
Date: Mon, 11 Oct 1999 22:23:32 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44531-1999.10.12-00.48.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Your directory structure is important. Your Motorola software directory
should be something like GPS70.
Under GPS70 directory is the following:
    Utility directory and 4 files (GPS.BAT, GPSLOAD.EXE, GPS_DFLT.DTA and
README.DOC)
     Under the Utitiy DIR are 4 files (MARKNET.EXE, GPSCOMMS.EXE, GPS70.EXE
and RELNET.EXE)
This is the DIR order needed to make the program work.

73
Doug

----- Original Message -----
From: Craig Young <craig_young@xtra.co.nz>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Monday, October 11, 1999 6:41 PM
Subject: [tacgps] Oncore DOS Control Program problem

> I installed the supplied Motorola Oncore software to my hard drive
> and when I run the GPS.BAT program the PC immediately beeps
> the internal speaker continuously, the only way to stop it is to
> shutdown the PC.
>
> I am using a 486 with 8MB RAM running DOS 6.2, I don't have
> windows on this machine.
>
> I manually stepped through the batch file and it is the first line that
> causes the problem: marknet.exe
>
> I looked on the internet for any new versions of the software (I am
> running installation disk 1.0) and couldn't find anything from TAPR
> or Motorola. I then searched TurboPower for Marknet and also
> nothing.

>
> Does anyone know why the program will not run?
>
> Thanks,
>
> Craig Young
> New Zealand
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] Re: Oncore DOS Control Program problem

From: "Craig Young" <craig_young@xtra.co.nz>
Date: Tue, 12 Oct 1999 20:21:33 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44545-1999.10.12-02.33.46--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Doug,

> Your directory structure is important. Your Motorola software directory
> should be something like GPS70.

My directory after install was exactly as you say except gps70 is
gps. Also, the gps70 program you mention in the utility directory
is called gps.exe in this install.

Anyway, I did exactly as you said, I created a new directory gps70
copied the files, created the utility dir, copied files, so it exactly
matched what you had and it still locks up the machine.

I think the problem may be the gps70 you are using and the gps I
have. The gps.exe file is dated 06-28-96 and is 328,422 bytes in
size. Is gps70 a much newer version?

Also, I have temporarily used a terminal program to view the comm
port activity to the oncore GPS. The GPS has never been used
before, actually it doesn't have an antennae on it yet. I wanted to
verify the level converter circuit, cabling, etc. by just powering up
the receiver and seeing if I get any message at all on the display ..
so far nothing. Does the receiver put out any information on the
serial port when it is in the cold start mode?

Thanks for helping,

Craig

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] RE: Oncore DOS Control Program problem

From: "Craig Young" <craig_young@xtra.co.nz>
Date: Tue, 12 Oct 1999 20:21:33 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44544-1999.10.12-02.33.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Martin,

>   I have some info for you. First, "marknet" is used to "tag" the
> interrupts used so the next program loaded can be unloaded by "relnet"
> or like. You can pull it (and the matching "relnet") from the batch
> file. There is one catch however.
That helps to explain what those two are for,

>   If you do that, you will not be able to run anything using comm ports
> after running "gpscomms" unless you reboot. Also, if you run
> "gpscomms" more than once, you will finish by crashing. "gpscomms" is

> used by gps.exe to talk to the comm ports.

The batch file I am running looks like this:

```
        c:\gps\utility\marknet.exe gps.mrk /q
        c:\gps\utility\gpscomms
        c:\gps\utility\gps
        c:\gps\utility\relnet.exe gps.mrk /h/q
```

I removed the marknet and relnet lines and tried it, but it now just
sits there after gpscomms .. it is as if gpscomms has now locked
up the machine.

I got another reply who mentioned a gps70, I am running a gps.exe
that is dated 1996, is it possible this is an old version and that
there is a much newer version that doesn't have this problem?

Thanks for helping,

Craig

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: Oncore DOS Control Program problem

From: "Doug McKinney" <Design@mt.to>
Date: Tue, 12 Oct 1999 06:14:48 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44570-1999.10.12-08.40.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Craig Young <craig_young@xtra.co.nz>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Tuesday, October 12, 1999 12:21 AM
Subject: [tacgps] Re: Oncore DOS Control Program problem

> Hi Doug,
>
> > Your directory structure is important. Your Motorola software directory
> > should be something like GPS70.
>
> My directory after install was exactly as you say except gps70 is
> gps. Also, the gps70 program you mention in the utility directory
> is called gps.exe in this install.
>
> Anyway, I did exactly as you said, I created a new directory gps70
> copied the files, created the utility dir, copied files, so it exactly
> matched what you had and it still locks up the machine.
>
> I think the problem may be the gps70 you are using and the gps I
> have. The gps.exe file is dated 06-28-96 and is 328,422 bytes in
> size. Is gps70 a much newer version?

No, it is 1994 and is 274K. Each version had a different gpsxx.exe.

>
> Also, I have temporarily used a terminal program to view the comm
> port activity to the oncore GPS. The GPS has never been used
> before, actually it doesn't have an antennae on it yet. I wanted to
> verify the level converter circuit, cabling, etc. by just powering up
> the receiver and seeing if I get any message at all on the display ..
> so far nothing. Does the receiver put out any information on the
> serial port when it is in the cold start mode?

New recievers can be in IDLE MODE. This is a non navigating sleep mode and
needs to be change to fix and a command for data rate needs to be given.
See my doc in www.tapr.org/tapr/html/gps.html and download the Operationf
the Motorola gps ... That should get you going.
 73
Doug

>
> Thanks for helping,
>
> Craig

>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] How to use TAC-2 to make ntp server on linux

From: "Marek Tutak" <m.tutak@impel.com.pl>
Date: Tue, 12 Oct 1999 12:30:50
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44603-1999.10.12-12.42.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi
I'am looking for some skripts to linux Red Hat6 to make my private
ntp server with TAC-2 card. Any http links willby fine.

Marek Tutak
Poland

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: How to use TAC-2 to make ntp server on linux

From: "Art Neilson, AH6PZ" <art@hawaii.rr.com>
Date: Tue, 12 Oct 1999 11:00:08 -1000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44618-1999.10.12-16.12.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Huh? I'm running FreeBSD 3.3 and have the ntp-4 distribution from
www.ntp.org (ntp-4.0.93a) compiled and installed on my system with
refclock support of the Oncore (refclock_oncore.c in the distribution).
FreeBSD also has a PPS_SYNC kernel option so the PLL is done in kernel
with the 1 PPS signal on pin 10 of the DB-9 from my TAC-2/Oncore Ut+ unit.
Doesn't Linux have a similar setup? You may not have the kernel support
for the 1 PPS but I'm sure you can compile and run ntpd on Linux.

At 12:30 PM 10/12/99, you wrote:
>Hi
>I'am looking for some skripts to linux Red Hat6 to make my private
>ntp server with TAC-2 card. Any http links willby fine.
>
>Marek Tutak
>Poland
>
>---
>You are currently subscribed to tacgps as: art@hawaii.rr.com
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
--
/*   __
 *   /)   _/_ It is a capital mistake to theorise before one has data.
 * /--/ __ /   Insensibly one begins to twist facts to suit theories,
 * / (_/ (_<__   Instead of theories to suit facts.
 *   -- Sherlock Holmes, "A Scandal in Bohemia"
 * Arthur W. Neilson III, AH6PZ
 * Bank of Hawaii Tech Support
 * art@hawaii.rr.com
 */

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Re: Oncore DOS Control Program problem

From: "Craig Young" <craig_young@xtra.co.nz>
Date: Wed, 13 Oct 1999 10:25:18 +1300
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>

Message-ID: <LYR6754-44625-1999.10.12-16.37.34--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Doug,

I finally gave up on the DOS version from Motorola and built a cable
to connect the oncore receiver to my windows based PC. I then
ran Tac-32 and it was able to successfully talk to the oncore
receiver. That proves the system is wired correctly and ready to
rumble. Now I am on to the dgps reference kit.

Craig

On 12 Oct 99, at 6:14, Doug McKinney wrote:

>
> ----- Original Message -----
> From: Craig Young <craig_young@xtra.co.nz>
> To: TAPR Special Interest Group <tacgps@lists.tapr.org>
> Sent: Tuesday, October 12, 1999 12:21 AM
> Subject: [tacgps] Re: Oncore DOS Control Program problem
>
>
> > Hi Doug,
> >
> > > Your directory structure is important. Your Motorola software directory
> > > should be something like GPS70.
> >
> > My directory after install was exactly as you say except gps70 is
> > gps. Also, the gps70 program you mention in the utility directory
> > is called gps.exe in this install.
> >
> > Anyway, I did exactly as you said, I created a new directory gps70
> > copied the files, created the utility dir, copied files, so it exactly
> > matched what you had and it still locks up the machine.
> >
> > I think the problem may be the gps70 you are using and the gps I
> > have. The gps.exe file is dated 06-28-96 and is 328,422 bytes in
> > size. Is gps70 a much newer version?
>
> No, it is 1994 and is 274K. Each version had a different gpsxx.exe.
>
> >
> > Also, I have temporarily used a terminal program to view the comm
> > port activity to the oncore GPS. The GPS has never been used
> > before, actually it doesn't have an antennae on it yet. I wanted to
> > verify the level converter circuit, cabling, etc. by just powering up
> > the receiver and seeing if I get any message at all on the display ..
> > so far nothing. Does the receiver put out any information on the
> > serial port when it is in the cold start mode?
>
> New recievers can be in IDLE MODE. This is a non navigating sleep mode and
> needs to be change to fix and a command for data rate needs to be given.
> See my doc in www.tapr.org/tapr/html/gps.html and download the Operationf
> the Motorola gps ... That should get you going.
> 73
> Doug
>
> >
> > Thanks for helping,
> >
> > Craig
> >
> >
> > ---
> > You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> > To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
> >
>
>
> ---
> You are currently subscribed to tacgps as: craig_young@xtra.co.nz
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org

To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Re: Oncore DOS Control Program problem

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Tue, 12 Oct 1999 19:30:21 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-44668-1999.10.12-19.44.37--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Good decision.

> I finally gave up on the DOS version from Motorola

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] DCC recap

From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 14 Oct 1999 13:03:39 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: "HF SIG list mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
" TAPR/AMSAT DSP "<dsp@tapr.org>,
"APRS SIG list mailing"<aprssig@tapr.org>,
"NETSIG list mailing"<netsig@tapr.org>,
"BBS SIG list mailing"<bbssig@tapr.org>,
" tacgps "<tacgps@tapr.org>, aprsnews@tapr.org, mic-e@tapr.org,
TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <LYR6754-44933-1999.10.14-13.16.30--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

1999 ARRL and TAPR Digital Communications Conference
September 24-26, 1999
Phoenix, Arizona
Greg Jones, WD5IVD

Another grand Digital Communications Conference! Special thanks go out to the workers at MARC for hosting locally and to PRUG for being our international co-host again. Also, a very special thanks to Geoff Baehr, N6LXA, Chief Network Officer of Sun Microsystems, for attending and giving the dinner talk on Saturday. Steve Stroh, N8GNJ, and Tina Stroh did an excellent job in working the arrangements with the hotel in Phoenix once it was selected. Tina wasn't able to attend because they are in the midst of adopting a child. Congratualtions to Tina and Steve. Sheila Bible was a big help and will be working with Tina in the coming years to help coordinate the conferences as I take a lesser role in the conference. As in the past, audio and photos from the conference will be available on the TAPR web site (http://www.tapr.org/dcc).

Next year's DCC will be hosted in Orlando, FL. The date of the conference should be selected by the end of the year.

The conference started Friday afternoon with the third annual APRS National Symposium moderated by Steve Dimse, K4HG. The symposium was full of talks and projects. During the symposium yet another new mystery hardware project was discussed. This years was a sneak preview provided by Kenwood to all those attending the DCC of their new mobile APRS equipped radio. The following people spoke at the APRS Symposium.

APRSdos and TrakNet update
        Bob Bruninga, WB4APR
MacAPRS/WinAPRS Update
        Keith Sproul, WU2Z
XAPRS
        Keith Sproul, WU2Z
APRS+SA Update
        Brent Hildebrant, KH2Z
Internet and APRS
        Steve Dimse, K4HG
WinCE version
        Rob Wittner, KZ5RW
Kenwood TH-D7 Tricks, Treats, and Tragedies
        Stan Horzepa, WA1LOU
Arizona APRS
        David McCarthy, KC7AYX
APRS ICQ
        Tom Schaefer, NY4I

Microcontrollers and APRS
        Steve Bible, N7HPR
APRS Working Group Update
        John Ackermann, N8UR

The Friday Technical Seminar on HDTV by Allen Finne, KB5SQK was cancelled at the last minute when Allen cound not attend.

Friday night saw the annual DCC social, which was sponsored by PRUG. After the social, PRUG presented a technical paper highlighting their current development. The papers focused on what had been happening with their prototype direct-sequence radio operating in the 2.4 GHz band. This prototype appears to be very well designed from an experimentation point of view.

As with past years, Saturday was split into two strands -- a paper session and a session featuring selected topics. As in previous years, the selected topic strand had fewer topics with more time to present. Four selected topics were presented. Steve Bible, N7HPR, presented an introduction to PICs. Guy Story, KC5GOI, presented an overview to APRS and discussed some of the latest happenings in the mode. Johan Forrer, KC7WW, did an overview and current status on HF communications. Bob Nielsen, W6SWE, did a talk on the current status of Linux in the amateur community. Thanks to all the selected topic speakers for taking the time to present more in-depth materials during the DCC.

The paper sessions included the following talks:
Regulatory Issue and Update
        Dewayne Hendricks, WA8DZP
ARRL Technology Task Force & The Technology Working Group
        Rich Moseson, W2VU
Arizona Packet Radio, Past Present and Future
        Keith Justice, KF7TP & Dan Meredith, N7MRP
APRS Mic-Lite
        Bob Bruninga, WB4APR
APRS for X-Windows (Linux)
        Keith Sproul, WU2Z
Automatic Weather Bulletins via APRS
        Keith Sproul, WU2Z
APRS Generic Digipeating Satellites for HT and Mobile Satellite Communications
        Bob Bruninga, WB4APR
XML and APRS
        Steve Dimse, K4HG
APRN: Automatic Picture Relay Network and SSTV Picture Server
        Keith Sproul, WU2Z & Bob Bruninga, WB4APR
APRS Stand Alone Message Receiver
        Keith Sproul, WU2Z
Proposal for a Spread Spectrum Transponder Payload on the International Space Station
        Matthew Ettus, N2MJI
UWB (Ultra Wide Band) Technology
        Dewayne Hendricks, WA8DZP
Status Report on TAPR 900MHz SS Radio Project
        Tom McDermott, N5EG
A Low-Cost HF Channel Simulator for Testing and Evaluating HF Digital Systems
        Johan Forrer, KC7WW
(Non Technical) Lessons to be learned from the PSK31 Phenomena
        Eduardo Jacob, EA2BAJ
A software Implementation for Federal Standard 1052 (Mil. Std. 188-110A HF Modems)
        Robert McGwier, N4HY
A Practical Approach to Implementing HF Digital Voice in the Amateur Service
        Charles Brain, G4GUO
HamWeb and HamStation
        Dale Puckett, K0HYD

For the banquet speaker, we were very fortunate to have Geoff Baehr, N6LXA, Chief Network Officer of Sun Microsystems. Geoff gave a very interesting and thought-provoking talk on the future of the Internet and networking in general and gave some comments on the future of amateur radio. We were very fortunate to have Geoff attend the conference and much thanks goes to Dewayne Hendricks, WA8DZP, for helping arrange another good banquet talk.

The Sunday morning seminar was a more time-intensive version of last year's introductory session on PIC development. Steve Bible, N7HPR, Steve Dimse, K4HG, John Hansen, W2FS, and Byon Garrabrant, N6BG gave a 5 hour long seminar on PIC development and programming issues. They showed lots of

interesting projects and answered a lot of questions from the audience.

Thanks to all those that I missed mentioning who helped with the DCC and
I look forward to seeing you next year!

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
---
e-mail: tapr@tapr.org   web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000   fax: 940-565-2544

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Re: How to use TAC-2 to make ntp server on linux

From: "Marek Tutak" <m.tutak@impel.com.pl>
Date: Fri, 15 Oct 1999 14:05:23 +0200
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45068-1999.10.15-07.23.56--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thank's. I recive answer from Reg Clemens also and He give me exactly
procedure to linux.
If someone intrested this procedure I can send to discusion group.

Marek

> Huh? I'm running FreeBSD 3.3 and have the ntp-4 distribution from
> www.ntp.org (ntp-4.0.93a) compiled and installed on my system with
> refclock support of the Oncore (refclock_oncore.c in the distribution).
> FreeBSD also has a PPS_SYNC kernel option so the PLL is done in kernel
> with the 1 PPS signal on pin 10 of the DB-9 from my TAC-2/Oncore Ut+ unit.
> Doesn't Linux have a similar setup? You may not have the kernel support
> for the 1 PPS but I'm sure you can compile and run ntpd on Linux.
>
>
> At 12:30 PM 10/12/99, you wrote:
> >Hi
> >I'am looking for some skripts to linux Red Hat6 to make my private
> >ntp server with TAC-2 card. Any http links willby fine.
> >
> >Marek Tutak
> >Poland
> >
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] Re: How to use TAC-2 to make ntp server on linux

From: "Steven R. Bible" <srbible@gate.net>
Date: Fri, 15 Oct 1999 17:17:30 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45176-1999.10.15-16.52.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

And check out John N8UR's NTP links.

     http://www.febo.com/ntp/ntp.html

- Steve

At 02:05 PM 10/15/99 +0200, you wrote:
>Thank's. I recive answer from Reg Clemens also and He give me exactly
>procedure to linux.
>If someone intrested this procedure I can send to discusion group.
>
>Marek
>
> > Huh? I'm running FreeBSD 3.3 and have the ntp-4 distribution from
> > www.ntp.org (ntp-4.0.93a) compiled and installed on my system with
> > refclock support of the Oncore (refclock_oncore.c in the distribution).

> > FreeBSD also has a PPS_SYNC kernel option so the PLL is done in kernel
> > with the 1 PPS signal on pin 10 of the DB-9 from my TAC-2/Oncore Ut+ unit.
> > Doesn't Linux have a similar setup? You may not have the kernel support
> > for the 1 PPS but I'm sure you can compile and run ntpd on Linux.
> >
> >
> > At 12:30 PM 10/12/99, you wrote:
> > >Hi
> > >I'am looking for some skripts to linux Red Hat6 to make my private
> > >ntp server with TAC-2 card. Any http links willby fine.
> > >
> > >Marek Tutak
> > >Poland
> > >
> >
>
>
>---
>You are currently subscribed to tacgps as: SRBIBLE@GATE.NET
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] WAAS online

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Tue, 19 Oct 1999 16:57:36 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45773-1999.10.19-16.09.55--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In case you folks didn't know...the FAA's WAAS
(Wide Area Augmentation System) for GPS accuracy
improvement went online on the 15th. You can
read more about at
http://gps.faa.gov/Programs/WAAS/waas.htm
One of the company making receivers to use
the technology is Marconi in Canada:
http://www.marconi.ca/Docs/CMC/Components/superstare.html
--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)
http://www.princeton.edu/~kirk

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Re: WAAS online

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Tue, 19 Oct 1999 16:31:17 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45777-1999.10.19-16.46.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What's the frequency for the DGPS input?

-----Original Message-----

>In case you folks didn't know...the FAA's WAAS
>(Wide Area Augmentation System) for GPS accuracy
>improvement went online on the 15th

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] Fwd: Re: WAAS online

From: Robert Winingham <kc5ejk@onramp.net>
Date: Wed, 20 Oct 1999 00:24:28 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45875-1999.10.20-00.36.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>What's the frequency for the DGPS input?

A correction message is prepared and uplinked to a GEO via a ground
uplink system (GUS). The message is then broadcast on the same frequency as GPS
 (L1,1575.42MHz) to receivers on board aircraft which are flying within the
broadcast coverageareа of the WAAS.

That's what I read.

-----   kc5ejk@onramp.net   or kc5ejk@amsat.org   -----

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: WAAS online

From: Lester.Veenstra@comsat.com
Date: Wed, 20 Oct 1999 08:39:33 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45898-1999.10.20-07.50.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Coast Earth station uplink (RHCP) 6454.4 to 6433.2 MHz

_____ Reply Separator _____
Subject: [tacgps] Re: WAAS online
Author: "TAPR Special Interest Group" <tacgps@lists.tapr.org> at INTERNET
Date: 10/19/99 4:31 PM

What's the frequency for the DGPS input?

-----Original Message-----

>In case you folks didn't know...the FAA's WAAS
>(Wide Area Augmentation System) for GPS accuracy
>improvement went online on the 15th

You are currently subscribed to tacgps as: LESTER.VEENSTRA@COMSAT.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
[Attachment: RFC822 message headers; text/plain; 1,235 bytes]

18. [tacgps] frequency

From: "Kirk D. Alexander" <kirk@Princeton.EDU>
Date: Wed, 20 Oct 1999 09:58:02 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45912-1999.10.20-09.11.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The WAAS is sending the correction information
on the same L1 (15xxMhz) frequency as the rest
of the GPS info is coming on. I think the newer
receivers deal with this by dedicating one of the
12 channels to scan for this info.
--
Kirk Alexander,
Manager
Multimedia Engineering Computation Atelier (MECA)
School of Engineering and Applied Science
E-430 Engineering Quadrangle
Princeton University
Princeton, N.J. 08544-5263
(609) 258-5420 (tel)
(609) 258-6744 (fax)
kirk@princeton.edu (email)

http://www.princeton.edu/~kirk

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: WAAS online

From: Dr Thomas A Clark <clark@tomcat.gsfc.nasa.gov>
Date: Wed, 20 Oct 1999 20:30:46 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45979-1999.10.20-15.44.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

It will be interesting to see when normal "user" receivers have
their firmware upgraded to make use of the WAAS signals.

One thing that worries me a lot about WAAS -- As I understand it,
the satellites that are sending down the WAAS corrections from
Geostationary orbit are merely "bent-pipe" linear transponders
with the DGPS signals being generated on the ground. Link
power control to keep the WAAS corrections from overwhelming the
GPS L1 signals is handled by twiddling the uplink power level.
These transponders are C-Band (6.4 GHz) in, L-Band GPS (1575.42 MHz)
out.

Anybody want to bet how long it will be before "Cap'n Midnite"
decides to jam the GPS system for the entire country by uplinking
a C-Band signal that captures the linear transponder?

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Re: WAAS online

From: chrise@n0jcf.com (Chris Elmquist)
Date: Wed, 20 Oct 1999 16:07:41 -0500 (CDT)
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-45984-1999.10.20-16.28.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dr Thomas A Clark wrote:
>
> One thing that worries me a lot about WAAS -- As I understand it,
> the satellites that are sending down the WAAS corrections from
> Geostationary orbit are merely "bent-pipe" linear transponders
> with the DGPS signals being generated on the ground. Link
> power control to keep the WAAS corrections from overwhelming the
> GPS L1 signals is handled by twiddling the uplink power level.
> These transponders are C-Band (6.4 GHz) in, L-Band GPS (1575.42 MHz)
> out.
>
> Anybody want to bet how long it will be before "Cap'n Midnite"
> decides to jam the GPS system for the entire country by uplinking
> a C-Band signal that captures the linear transponder?

Oh man... some serious RocketScience going on there. I'd give 'em
about an hour... infact, I hope it takes only that long so that
they can realize what they have done and fix it!

Chris

--
Chris Elmquist
chrise@n0jcf.com

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] GPS bargain??

From: smallwood@technologist.com
Date: Wed, 20 Oct 1999 22:58:15 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46031-1999.10.20-22.28.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What am I missing?

I went to the Rand McNally website... and found a GPS receiver bundled with
StreetFinder 2000.

This receiver is built into an antenna assembly (about the size of a PC
mouse). It takes DC from a PS/2 mouse port, and supplies NMEA 2.0 to a
serial connector. It is designed to be operated from a computer; but it
should be able to plug straight in to a TNC if power is supplied separately.

Anybody have experience with this compact receiver?

The GPS/software bundle retailed for $99.
By registering at their site, I got an immediate discount of 20% on the
purchase.
Today, when I received the GPS, there was a $20 rebate attached.

So, I have a GPS and street-mapping software for about $73 after taxes,
shipping, and everything!

Their website is http://www.randmcnally.com .

Bob Smallwood, N3FM
<smallwood@technologist.com>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Re: How to use TAC-2 to make ntp server on linux

From: "Marek Tutak" <m.tutak@impel.com.pl>
Date: Thu, 21 Oct 1999 2:13:7
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46054-1999.10.21-02.25.32--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

<Marek> I thing Reg you have no objection to it.

Im not sure what you are actually asking for, but Id be glad to help.
You should first go out to ftp://ftp.udel.edu/ntp/testing/ and get
the latest verson of the ntp sources that you find there.

You should also go out to ftp://ftp.linux.org
And get a copy of the sources for the Linux kernel (2.2.12)

and then go out to ftp://ftp.linux.org/pub/linux/daemons/ntp/PPS
and get the PPSkit-0.7.x [DO NOT GET 0.8.x !!! it is not supported in
ntp quite yet].

Apply the PPSkit patch to the 2.2.12 sources, and build a new kernel,
answering the questions (twice) that you want NTP support, and that you
want NTP serial support.

OK, your just about there.
Go to /usr/include/sys, and mv the files timepps.h and timex.h out of the
way [In 6.0 I didnt have a timepps.h, and moved timex.h -> timex.h~
make two symbolic links so that you will in fact see the copies of these
files that exist in the kernel sources,

```
ln -s ../linux/timepps.h timepps.h
ln -s ./linux/timex.h    timex.h
```

now build NTP.

You will need a couple of symbolic links in the dev directory so that the
oncore driver can see the Tac32,

```
ln -s ttyS1 oncore.pps.0
ln -s ttyS1 oncore.serial.0
```

and a pair of config files, mine read

```
[reg@orion /etc]$ cat ntp.conf
# NTP configuration file (ntp.conf)
###### NTP V4 ####

# Miscellaneous stuff
```

```
logfile     /var/adm/ntpstats/xntpd
driftfile   /etc/ntp.drift      # path for drift file
statsdir    /var/adm/ntpstats/  # directory for statistics files

statistics loopstats peerstats clockstats
filegen loopstats  file loopstats  type day enable
filegen peerstats  file peerstats  type day enable
filegen clockstats file clockstats type day enable

### Kernel PPS Selection
enable kernel

### Reference clock section ###
pps     /dev/oncore.pps.0

### Configuration section ###

server 127.127.1.0                      # Local clock
fudge  127.127.1.0 stratum 8            # Local stratum

server 127.127.30.0 prefer              # ONCORE

# Peer Section

peer clemens-pc.dwf.com
peer clemens.dwf.com

# External Servers

# server time.nist.gov
# server clock.llnl.gov
[reg@orion /etc]$

and

[reg@orion /etc]$ cat ntp.oncore
#
# this is a sample ONCORE Data File.
#

Mode  1

lat   35 08.999
lon   -106 34.610
ht 5274 ft

delay = 65 ns

[reg@orion /etc]$

If you have run Tac32 or SAWatch, you can use the lat/long/ht you got
there
and Mode = 1 as I have above, if not, then use "Mode = 2" insted and the
Oncore will average your position for a couple of hours as a starting
point

Thats about it, once you are up, you can look at the clockstats file and
the loopstats file to see how well you are doing.

Reg.Clemens
reg@df.com


Marek Tutak


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

23. [tacgps] Re: WAAS online

```
From: Lester.Veenstra@comsat.com
Date: Thu, 21 Oct 1999 08:00:06 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46061-1999.10.21-07.12.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Well yes in principle, the signal could by jammed with sufficient
     C-Band EIRP, but the same can be said for any commercial satellite

operating at C-band (or K-Band for that matter). This attack would only affect the WAAS correction signal and would of course not "jam the GPS system for the entire country". The reality is that:

(1) Since the original "Midnight" incident, these kind of attacks (denial of service by saturation), are virtually nonexistent.

(2) Never-the-less, "Midnight" was a sufficient wake up call to the commercial industry, that the tools available to the Government for geolocation of emitters have migrated to the commercial operators. These systems have become commercially necessary, not due to deliberate QRM, but the level of incidents of interference due to the low skill level prevailing in the operators of many commercial transmit (Uplink) sites.

_____ Reply Separator _____
Subject: [tacgps] Re: WAAS online
Author: "TAPR Special Interest Group" <tacgps@lists.tapr.org> at INTERNET
Date: 10/20/99 4:07 PM

Dr Thomas A Clark wrote:
>
> One thing that worries me a lot about WAAS -- As I understand it,
> the satellites that are sending down the WAAS corrections from
> Geostationary orbit are merely "bent-pipe" linear transponders
> with the DGPS signals being generated on the ground. Link
> power control to keep the WAAS corrections from overwhelming the
> GPS L1 signals is handled by twiddling the uplink power level.
> These transponders are C-Band (6.4 GHz) in, L-Band GPS (1575.42 MHz)
> out.
>
> Anybody want to bet how long it will be before "Cap'n Midnite"
> decides to jam the GPS system for the entire country by uplinking
> a C-Band signal that captures the linear transponder?

Oh man... some serious RocketScience going on there. I'd give 'em about an hour... infact, I hope it takes only that long so that they can realize what they have done and fix it!

Chris

--
Chris Elmquist
chrise@n0jcf.com

You are currently subscribed to tacgps as: LESTER.VEENSTRA@COMSAT.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
[Attachment: RFC822 message headers; text/plain; 1,200 bytes]

24. [tacgps] RE: GPS bargain??

From: "Expressmailbc" <bcampbell@scettc.org>
Date: Thu, 21 Oct 1999 10:29:58 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46077-1999.10.21-09.42.29--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Don't know if you're missing anything, but I went to the site, looked at it, bought it too. At that price it's got to be of use for something. Hoping it will make a pretty good tracker gps. Thanks for the tip.
Barry, W2CGX Branchburg NJ

> -----Original Message-----
> From: bounce-tacgps-5572@lists.tapr.org
> [mailto:bounce-tacgps-5572@lists.tapr.org]On Behalf Of
> smallwood@technologist.com
> Sent: Wednesday, October 20, 1999 10:58 PM
> To: TAPR Special Interest Group
> Subject: [tacgps] GPS bargain??
>
>
> What am I missing?
>
> I went to the Rand McNally website... and found a GPS receiver
> bundled with
> StreetFinder 2000.
>

> This receiver is built into an antenna assembly (about the size of a PC
> mouse). It takes DC from a PS/2 mouse port, and supplies NMEA 2.0 to a
> serial connector. It is designed to be operated from a computer; but it
> should be able to plug straight in to a TNC if power is supplied
> separately.
>
> Anybody have experience with this compact receiver?
>
> The GPS/software bundle retailed for $99.
> By registering at their site, I got an immediate discount of 20% on the
> purchase.
> Today, when I received the GPS, there was a $20 rebate attached.
>
> So, I have a GPS and street-mapping software for about $73 after taxes,
> shipping, and everything!
>
> Their website is http://www.randmcnally.com .
>
>
> Bob Smallwood, N3FM
> <smallwood@technologist.com>
>
>
> ---
> You are currently subscribed to tacgps as: BARRYC@COMPUBELL.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] Re: WAAS online

From: "Ira A. Wilner" <bdcst@sover.net>
Date: Thu, 21 Oct 1999 12:43:15 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46085-1999.10.21-12.02.43--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Dr Thomas A Clark <clark@tomcat.gsfc.nasa.gov>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Wednesday, October 20, 1999 4:32 PM
Subject: [tacgps] Re: WAAS online

>One thing that worries me a lot about WAAS -- As I understand it,
>the satellites that are sending down the WAAS corrections from
>Geostationary orbit are merely "bent-pipe" linear transponders
>with the DGPS signals being generated on the ground

Yikes! How stupid, although it might be cost effective. Of course, even a
bent pipe transponder can be turned off by a station keeping command from
the satellite's owner if necessary. And the output of modern solid state
transponders are not completely at the mercy of the uplinked signal level.
Local gain is adjustable on most if not all modern designs that do not use
TWT's.

--Ira

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] Re: WAAS online

From: "Ira A. Wilner" <bdcst@sover.net>
Date: Thu, 21 Oct 1999 12:48:28 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46086-1999.10.21-12.02.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Lester.Veenstra@comsat.com <Lester.Veenstra@comsat.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Date: Thursday, October 21, 1999 8:00 AM
Subject: [tacgps] Re: WAAS online

>   (2) Never-the-less, "Midnight" was a sufficient wake up call to the
>   commercial industry, that the tools available to the Government for
>   geolocation of emitters have migrated to the commercial operators.
>   These systems have become commercially necessary, not due to
>   deliberate QRM, but the level of incidents of interference due to the
>   low skill level prevailing in the operators of many commercial
>   transmit (Uplink) sites.

Lester makes a good point about the self policing of the satellite industry
to shut down accidental illumination of birds. But the time it takes to
get rid of interference to a video feed isn't going to endanger anybody.
Even a brief loss of WAAS might!

--Ira

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

27. [tacgps] RTCM-104 corrections and NEMA together

From: Jeff King <jeff@aerodata.net>
Date: Fri, 22 Oct 1999 22:36:23 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46311-1999.10.22-21.49.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think this question shares many of the same issues as the original
TAPR DGPS board, at least with regards to TNC hookup.

I want to use a Garmin GPS-35 and both be able to send init strings
to it as well as RTCM corrections. Meaning, I'll need to tie the
GPS serial inputs together, and feed them from one UART. Of course,
the baud rates will be the same on both ports.

Has anyone ever tried this and does it work OK? I'm using a microcontroller
with the GPS. On power up, it will send a init string to the GPS (in NEMA).
Then after that, it will only send RTCM to the GPS unit. I'll only
be looking at the NEMA back from the GPS-35 (one serial line only).

Also, anyone know the OEM price on the GPS-35 these days? Last time I
bought one it was $145, but I heard they came down.

I have both the above questions into Garmin (Brad Wiseman), but have not
yet heard back from him.

Thanks!

Jeff

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

28. [tacgps] Re: RTCM-104 corrections and NEMA together

From: Dave Martindale <davem@cs.ubc.ca>
Date: Fri, 22 Oct 1999 20:13:34 -0700
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46312-1999.10.22-22.26.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:36 PM 22/10/99 -0400, you wrote:
>I want to use a Garmin GPS-35 and both be able to send init strings
>to it as well as RTCM corrections. Meaning, I'll need to tie the
>GPS serial inputs together, and feed them from one UART. Of course,
>the baud rates will be the same on both ports.

>Has anyone ever tried this and does it work OK? I'm using a microcontroller
>with the GPS. On power up, it will send a init string to the GPS (in NEMA).
>Then after that, it will only send RTCM to the GPS unit. I'll only
>be looking at the NEMA back from the GPS-35 (one serial line only).

Are you sure you need to do this? The GPS 35 has an EEPROM or flash
memory for its configuration state, so you can program it for a particular
set of output sentences and rates, power it off, then power it on later

and it continues with the same configuration. Plus it saves almanac and
last known position, and has its own onboard time-of-day clock, so it
starts up fast without needing to receive time and location data from
a host. Basically, for normal operation, you don't *need* to send it
anything at all.

I haven't tried it, but I expect that the 35 might be unhappy to get
NMEA-formatted stuff mixed in with the RTCM data on port 1, which is
intended for RTCM or binary commands (but not both intermixed).

Finally, does the current GPS-35 have both serial ports wired out to
the outside world. In the early days, the older packaged units (GPS-30
and maybe early 35's) had only the NMEA serial port wired to the outside
world. If you wanted access to both serial ports, you had to use the
unpackaged GPS 20/25 boards.

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

29. [tacgps] Re: Oncore Software difficulty

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Mon, 25 Oct 1999 08:44:23 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46581-1999.10.25-07.57.08--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
 Last week I again looked at the TAPR distribution disk for the
Oncore software after another person complained about it not running.
The file sizes and dates correspond to ver 9.0 of the software. If you
look at the files with the DEBUG program using the "D" dump command,
you will see the files contain part of the TAPR mailing list !!!
 Obviously the master disk has been overwritten with a database file
and a new master should be obtained by TAPR from Motorola,
before they ship any more units.

 Jim Korenz N8PXW

Jim Korenz
09/21/99 01:43 PM
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: Re: [tacgps] Oncore Software difficulty

HI, All
 I also just received a VP from the TAPR "stash". I have the same
problems with the software. I went a little farther. I have an older version
of the Mot software, 9.0 I think. Anyway, I substituted each of the programs
in the "GPS.BAT" file with their older versions. In every case the newer
version of the program hung my machine. I think they have a bad master,
or problems in copying.

 Jim Korenz N8PXW

bounce-tacgps-5599@lists.tapr.org on 09/21/99 01:04:56 PM
Please respond to tacgps@lists.tapr.org @ INTERNET
To: tacgps@lists.tapr.org @ INTERNET
cc:
Subject: [tacgps] Oncore Software difficulty

I just received my new Oncore (one of the last TAPR had), and
it works fine, but I'm having difficulty getting the software
that comes with it to run. This is the Motorola Controller software.

When I install it (following the instructions, no less!) and
run it, it hangs after running the Marknet gps.mrk program.

I've tried it on 2 different PC's - my P-550 and an old DOS - only
386 I use for programming chips. Same symptom on both machines - I

execute the "GPS" batch file, and it locks up the computer,
requiring a reboot.

I've contacted the TAPR office, and a new disk is being sent
out, but I wonder if anyone has any other ideas?

(By the way, I can't believe how fast the Oncore locks,
compared to my old GPS-20. When I powered it up the first
time, the 1PPS light on my board began flashing within 5
seconds from a cold start!)

Gary Sanders   WB0BZR

You are currently subscribed to tacgps as: JFKORENZ@GOODYEAR.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

30. [tacgps] Re: Oncore Software difficulty

From: G Sanders <gsanders1@bigfoot.com>
Date: Tue, 26 Oct 1999 16:53:21 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-46722-1999.10.26-16.06.02--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

When I received the replacement disk from TAPR, it worked fine.

So I suspect that perhaps they may have at least two masters -
a good one and a corrupted one. And whether the disk you receive
works or not may simply be the luck of the draw.

(I'm in no way implying that it's intentional).

Gary Sanders

JIM KORENZ wrote:
>
> Hi All,
> Last week I again looked at the TAPR distribution disk for the
> Oncore software after another person complained about it not running.
> The file sizes and dates correspond to ver 9.0 of the software. If you
> look at the files with the DEBUG program using the "D" dump command,
> you will see the files contain part of the TAPR mailing list !!!
> Obviously the master disk has been overwritten with a database file
> and a new master should be obtained by TAPR from Motorola,
> before they ship any more units.
>
> Jim Korenz N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

November 1999

Original source file: tacgps.9911
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9911

1. [tacgps] Re: GPS bargain??

From: "Eric A. Cottrell" <eac@shore.net>
Date: Fri, 05 Nov 1999 21:13:11 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-48310-1999.11.05-20.26.36--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

smallwood@technologist.com wrote:
>
> What am I missing?
>
> I went to the Rand McNally website... and found a GPS receiver bundled with
> StreetFinder 2000.
>
> This receiver is built into an antenna assembly (about the size of a PC
> mouse). It takes DC from a PS/2 mouse port, and supplies NMEA 2.0 to a
> serial connector. It is designed to be operated from a computer; but it
> should be able to plug straight in to a TNC if power is supplied separately.
>
> Anybody have experience with this compact receiver?

Hello,

I have seen some messages on I believe APRS or AMSAT list.

The case is not weatherproof.

>From the output strings it seems to be based on the Rockwell Zodiac Chipset.
This is the same chipset used in the Delorme Tripmate (but the features
and board layout are likely different).

73 Eric eac@shore.net WB1HBU

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] Sony Sky Map 2000 GPS

From: JIM KORENZ <jfkorenz@goodyear.com>
Date: Tue, 16 Nov 1999 08:02:13 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50146-1999.11.16-07.15.53--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi All,
 My local CompUSA has a Sony Sky Map 2000 GPS on sale for
$139.99 (reg $189.99). The ad says " a complete GPS-guided routing
system for notebook computers. With door-to-door, coast-to-coast
route planning and a 12-channel GPS receiver." Does anyone
have one of these ? Does it talk NMEA? Will it accept RTCM?
I thought that it might be a PCMCIA card unit, but the picture
shows a tripmate-like black block that must sit on your dash.

 Thanks,
 Jim Korenz N8PXW

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] FW: UTC Questionnaire

From: "Boissonneault, Martin (A)" <ve2mrx@amsat.org>
Date: Tue, 16 Nov 1999 19:14:17 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50271-1999.11.16-18.34.47--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi all!
        I just received this. I wonder why they would want to change
something we are used to? I got this since I subscribed to an Leap
second insertion warn list.

        Any comments??

Martin VE2MRX

mailto:ve2mrx@amsat.org
-----Original Message-----
From: <Concealed by VE2MRX for Spam considerations>
Sent: Tuesday, November 16, 1999 11:30
Subject: UTC Questionnaire

Dear Colleague,

It has been proposed to change the definition of Coordinated Universal Time (UTC) regarding the insertion of leap-seconds, possibly even eliminating their use. Leap seconds are introduced so as to keep UTC synchronized (within 0.9 s) to the time scale determined from the Earth's rotation.

Should no new leap seconds be inserted, solar time will diverge from atomic time at the rate of about 2 seconds every 3 years, and after about a century |UT1-UTC| would exceed 1 minute. Although no fundamental problems are anticipated, it is very likely that Y2K-like problems may result in software that assumes UT1=UTC, or |UT1-UTC|< some
value, or whose input/output records use a field size that can only accommodate |UT1-UTC| values up to one second.

To gather information, an URSI Commission J Working Group was formed, consisting of Don Backer, Wim. N. Brouw, Barry Clark, Irwin Shapiro, Ir. E. Van Lil, and myself.

We would like to ask you to consult with the members of your institute who currently deal with UT1-UTC, and give us a considered response to the following two questions:

A. If the appropriate international bodies decide to eliminate the insertion of new leap seconds, would you foresee any practical problems
for your institution/instrument/observations?

yes ___

* no ____

* possibly ____

(* please explain any known or possible problems)

B. Would you be in favor of such a proposal?

yes ____

no ____

indifferent ___

have better idea ___

(feel free to comment)

C. Is there anyone else you would recommend we contact?
(feel free to forward this eamil directly)

I would appreciate your assistance, and a response by January 15 to <Author's note: I pulled out the email address to prevent automated spamming. VE2MRX>

I am attaching a list of institutions and persons contacted, except for 931 institutions whose emails were obtained from the AAS. I would like to apologize to anyone contacted twice, but also appreciate it if you would forward this email to anyone we have missed. Also, if you are an URSI Commission J national chair, we would appreciate your forwarding this email to your complete membership and in particular to the directors of observatories.

Sincerely,

Demetrios Matsakis

__
Dr. Demetrios N. Matsakis Director, Time Service Department
(202) 762-1587 DSN 762-1587 U. S. Naval Observatory
FAX (202) 762-1511 3450 Massachusetts Avenue NW
<concealed by VE2MRX> Washington DC, USA 20392-5420
_____
__

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] TAC -2 KIT

From: "Gary Brechin" <garyb@i-o.net.au>
Date: Wed, 17 Nov 1999 3:52:39
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50361-1999.11.17-04.06.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Does the TAC - 2 Kit include a Motorola GPS Receiver IC?.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: TAC -2 KIT

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 17 Nov 1999 03:59:07 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50363-1999.11.17-04.15.31--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

No. The Oncore plugs into it daughter-board style.

-----Original Message-----

>Does the TAC - 2 Kit include a Motorola GPS Receiver IC?.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

6. [tacgps] Re: TAC -2 KIT

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 17 Nov 1999 07:17:17 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50382-1999.11.17-06.30.57--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 03:52 AM 11/17/99 +0000, you wrote:
>Does the TAC - 2 Kit include a Motorola GPS Receiver IC?.

Hello Gary,

Just as Steve said, no it does not. The TAC-2 is a multi-GPS
platform. The Oncore series (VP, UT+, and GT+) can be used and so can the
Garmin GPS-20 or -25 and Trimble SV-6. The unit with the best timing is
the VP then the UT+.

Hope this helps.

- Steve, N7HPR
   n7hpr@tapr.org
   n7hpr@amsat.org

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

7. [tacgps] Re: TAC -2 KIT

From: "Doug McKinney" <Design@mt.to>
Date: Wed, 17 Nov 1999 06:52:32 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50404-1999.11.17-09.09.05--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Note: if you have Motorola GPS you have 2 options for TAC2 functions. The first is the TAC2 itself, which is a multipurpose GPS interface board for the Motorola PVT6, ONCOREs, Trimble and Gamin GPS engines. It provides the correct power for each board you select to use and provides the correct 1PPS interface for the selected GPS engine. The second is a ONCORE only interface board. This board is the VPGUIB. It has the power and RS232 interface circuits only for the VP, GT+ and UT+ ONCORE GPS engines. On that same board is the printed circuit layout for adding about $3 worth parts and having the identical TAC2 interface. The Garmin interface board has the same feature. I designed and Tom Clark approved the design. Tom was going to have an expansion board to add to the TAC2, but it didn't get completed, which was of the big selling points of the TAC2 project.

Doug

----- Original Message -----
From: Gary Brechin <garyb@i-o.net.au>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Wednesday, November 17, 1999 3:52 AM
Subject: [tacgps] TAC -2 KIT

> Does the TAC - 2 Kit include a Motorola GPS Receiver IC?.
>
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: TAC -2 KIT

From: Lyle Johnson <lylej@azstarnet.com>
Date: Thu, 18 Nov 1999 00:37:34 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50544-1999.11.17-18.52.01--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>The TAC-2 is a multi-GPS
>platform. The Oncore series (VP, UT+, and GT+) can be used and so can the
>Garmin GPS-20 or -25 and Trimble SV-6.

Actually, it is the SK-8 board that we tested. I don't know if the SV-6 works or not. The SK-8 is now being discontinued by Trimble, and replaced with the SK-2 which Trimble claims is form/fit/function/software compatible.

We have tested the SK-2 at work in our systems and found it to be so, but we don't use the timing function so I cannot say with certainty that the new SK-2 will work with the TAC-2.

Regards,

Lyle

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Bell Labs Geolocation Technology Pinpoints Wireless 911 Calls Within 15 Feet

From: kenneth.e.nichols@bellatlantic.com
Date: Thu, 18 Nov 1999 17:37:23 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-50710-1999.11.18-16.51.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Interesting reading at:

http://www.bell-labs.com/news/1999/june/30/1.html

Looks to be a differential system with a mobile twist?
-Ken- KD3VK

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Jamming GPS

From: "Dr Thomas A Clark (W3IWI)" <tac@clark.net>
Date: Tue, 30 Nov 1999 05:50:42 +0000
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-52411-1999.11.30-00.05.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The topic of GPS jammers has come up several times.
The following is excerpted from this week's USAF
"GPS For Air and Space Power" newsletter #178
[which you can soon fetch at URL
   http://www.anser.org/publications/gps-news]

> DAGR: Col. Mike Mazzucchi, director of the Army Systems
> Management Center, said that the Army can not expect full
> use of GPS in future conflicts. Inexpensive 4w GPS jammers
> that can disrupt the GPS signal to a distance of 200 km are
> now readily available. The enemy can set up a grid of such
> jammers and deny U.S. forces use of GPS on the entire
> battlefield. In his view, an even more threatening
> capability that the enemy could employ against the Army
> communications system is spoofing of the Army signals
> and thereby increasing the prob-ability for fratricide.
> Consequently, the Army is developing anti-jamming and
> anti-spoofing capabilities for the Defense Advanced
> GPS Receiver (DAGR). Current effort focuses on reducing
> the DAGR size and weight. The Army is preparing a
> RFP for 220,000 DAGRs. [from Inside the Army, 11/8/99]

Aside: I believe that the "inexpensive 4w GPS jammer"
referred to is either the one that originated in the
Former Soviet Union or from Iraq. If it's the unit that
I'm thinking of, it could be easily built by any amateur
who has some familiarity with microwave hardware and
can handle 74HC-series digital logic. I put one together
(albeit to be used as a test signal generator with
a power level considerably less than 4w) in a few
evenings a couple of years ago.

73, Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Re: Jamming GPS

From: John Franke <j.m.franke@larc.nasa.gov>
Date: Tue, 30 Nov 1999 07:33:54 -0400
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-52433-1999.11.30-06.48.07--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> I put one together
>(albeit to be used as a test signal generator with
>a power level considerably less than 4w) in a few
>evenings a couple of years ago.
>
>73, Tom
>
>---
Same here, I used a PLL microwave brick oscillator with the final SRD
multiplier replaced with a SMA connector.

John WA4WDL

John M. Franke

Senior Technologist
M/S 200
Bldg. 1229, Rm 137
NASA Langley Research Center
Commercialization Program Office
Hampton, VA 23681-2199

Voice: 757 864 4623
Fax: 757 864 8314
E-mail: j.m.franke@larc.nasa.gov

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Re: Jamming GPS

From: Jeff King <jeff@aerodata.net>
Date: Tue, 30 Nov 1999 21:57:25 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-52550-1999.11.30-21.11.49--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 05:50 AM 11/30/99 +0000, Dr Thomas A Clark (W3IWI) wrote:
>The topic of GPS jammers has come up several times.

>
>
>Aside: I believe that the "inexpensive 4w GPS jammer"
>referred to is either the one that originated in the
>Former Soviet Union or from Iraq.

Here is a article and picture of the one made in Russia:

http://www.eplrs.com/public/news/00010.htm

-Jeff

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

December 1999

Original source file: tacgps.9912
Source: http://ftp.tapr.org/product_docs/TAC2/mail_archives/tacgps.9912

1. [tacgps] Trimble SVeeSix-CM3

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Fri, 3 Dec 1999 20:07:52 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-53061-1999.12.03-20.22.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

tacgps group ---

I see that 4 Trimble GPS receiver boards are currently for sale of eBay

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=213023075

G. Beat
W9GB

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

2. [tacgps] More Trimble

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Fri, 3 Dec 1999 20:19:36 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-53062-1999.12.03-20.34.06--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This gentleman has another 6 Trimble SV-6 CM-3 available at another Dutch
auction on eBay .....

now what did he do with the receiver/trasmitter modules for the obsolete
vehicle system ???

http://cgi.ebay.com/aw-cgi/eBayISAPI.dll?ViewItem&item=211467545

G. Beat
W9GB

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

3. [tacgps] Re: More Trimble

From: clark@tomcat.gsfc.nasa.gov
Date: Sat, 04 Dec 99 02:23:52 UTC
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6754-53064-1999.12.03-20.38.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

be cautious about which firmware is in the EPROMs!

Tom

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

4. [tacgps] another interesting GPS item

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Tue, 7 Dec 1999 22:53:16 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-53806-1999.12.07-23.08.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Some interesting surplus appearing in eBay this month

Item #215831818 currently on auction:

CPS/Continuous Positioning System:

Combines the uninterrupted positioning capability of a dead reckoning system
with the absolute positioning capability of a Global Postioning System
(GPS). The dead reckoning navigation component uses a Fiber Optic Gyroscopic
Compass (FOG) and combines it with a vehicle odometer sensor, while the GPS
component utilizes a high-quality Motorola 8 channel DGPS capable GPS
receiver. Kalman-filter signal processing adapted from avionics and
aerospace applications optimally blends all the sensor information, and
outputs the resultant position fix in NMEA-0183 standard format through a
serial port.

Uses 24V DC, weight 2 lbs, measures 8"x 6"x 3" RS232 Serial port NMEA-1083
output, RS232 Serial port RTCM input, SAE1807 compliant.

Antenna not included, manual/additional specifications available upon
request, Rugged enough to withstand military applications.

Up to 200 units, sold in lots of 50, sold as is.
----
what I find interesting is 200 units !! ..... want to make a bet a Oncore
VP is hiding inside?

G. Beat
w9gb

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

5. [tacgps] Re: another interesting GPS item

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Wed, 08 Dec 1999 09:33:12 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-53876-1999.12.08-11.50.33--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hmmmm... I might be interested in a group buy should one take place.

At 10:53 PM 12/07/1999 -0600, you wrote:
>Some interesting surplus appearing in eBay this month
>---------------------
>Item #215831818 currently on auction:
>
>CPS/Continuous Positioning System:
>
>Combines the uninterrupted positioning capability of a dead reckoning system
>with the absolute positioning capability of a Global Postioning System
>(GPS). The dead reckoning navigation component uses a Fiber Optic Gyroscopic
>Compass (FOG) and combines it with a vehicle odometer sensor, while the GPS
>component utilizes a high-quality Motorola 8 channel DGPS capable GPS
>receiver. Kalman-filter signal processing adapted from avionics and
>aerospace applications optimally blends all the sensor information, and
>outputs the resultant position fix in NMEA-0183 standard format through a
>serial port.
>
>Uses 24V DC, weight 2 lbs, measures 8"x 6"x 3" RS232 Serial port NMEA-1083
>output, RS232 Serial port RTCM input, SAE1807 compliant.
>
>Antenna not included, manual/additional specifications available upon
>request, Rugged enough to withstand military applications.
>
>Up to 200 units, sold in lots of 50, sold as is.
>-------
>what I find interesting is 200 units !! ..... want to make a bet a Oncore
>VP is hiding inside?
>
>G. Beat
>w9gb
>
>
>
>---
>You are currently subscribed to tacgps as: ROWL@EARTHCORP.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

```
--------------------

Michael St. Laurent
Hartwell Corporation

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

6. [tacgps] Ebay 8 Channel GPS with Fiber Optic Gyro

```
From: "Chuck Beuning" <cbeuning@kscable.com>
Date: Wed, 8 Dec 1999 21:54:33 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54149-1999.12.08-22.09.16--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ref Ebay item #215831818 currently on auction:

Cool! This is something I've been looking for for a long time. If someone
buys the lot of 50, I will take 3 off their hands.
KVH also has a differential GPS version of this, but then you would have to
pay the full price.

If you go to http://www.kvh.com/products/sensor/fog/cps.html  you can obtain
some more details for these units.

Here is a paper on it's operation
http://www.kvh.com/support/product_docs/blended.pdf

It may contain this Gyro
http://www.kvh.com/products/sensor/fog/autogyro.html.

An ECore 1000 Gyro kit is selling for $1495....

Chuck Beuning


---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
```

7. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

```
From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Wed, 8 Dec 1999 22:13:48 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54152-1999.12.08-22.28.44--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Caroline Reilly, who has these items for sale on eBay has a minimum bid of
qty 1  around $ 1,000.  She would like to sell the units in lots of 50.
I did not follow-up this inquiry and would expect a discount for a lot of 50
sale.

If there was interest Ms. Reilly's e-mail address is  CReilly141@aol.com

I have no connection with seller ... etc. etc. ... only an informational
posting.

G. Beat
w9gb

----- Original Message -----
From: Chuck Beuning <cbeuning@kscable.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Wednesday, December 08, 1999 9:54 PM
Subject: [tacgps] Ebay 8 Channel GPS with Fiber Optic Gyro


> Ref Ebay item #215831818 currently on auction:
>
> Cool! This is something I've been looking for for a long time. If someone
> buys the lot of 50, I will take 3 off their hands.
> KVH also has a differential GPS version of this, but then you would have
to
> pay the full price.
>
> If you go to http://www.kvh.com/products/sensor/fog/cps.html  you can
obtain
```

> some more details for these units.
>
> Here is a paper on it's operation
> http://www.kvh.com/support/product_docs/blended.pdf
>
> It may contain this Gyro
> http://www.kvh.com/products/sensor/fog/autogyro.html.
>
> An ECore 1000 Gyro kit is selling for $1495....
>
> Chuck Beuning
>
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

8. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: G Sanders <gsanders1@bigfoot.com>
Date: Thu, 09 Dec 1999 00:19:10 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54182-1999.12.08-23.33.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gregory Beat wrote:
>
> Caroline Reilly, who has these items for sale on eBay has a minimum bid of
> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
> I did not follow-up this inquiry and would expect a discount for a lot of 50
> sale.

I also sent an inquiry to her earlier asking if the auction was for
quantity 1 or quantity 50. I haven't received a response yet.

I hope she puts a clarification on her auction, because I imagine
someone's going to get a big surprise when the package arrives
in the mail!

Gary Sanders   WB0BZR

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

9. [tacgps] Re: tacgps digest: December 08, 1999

From: Derek Lassen <kn6td@clubnet.net>
Date: Wed, 08 Dec 1999 23:57:25 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54202-1999.12.09-02.18.22--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to buy a few, also (if cheap).
At 12:01 AM 12/9/99 -0600, you wrote:
>TAPR Special Interest Group Digest for Wednesday, December 08, 1999.
>
>1. Re: another interesting GPS item
>2. Ebay 8 Channel GPS with Fiber Optic Gyro
>3. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>4. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>
>--
>
>Subject: Re: another interesting GPS item
>From: "Michael St. Laurent" <rowl@earthcorp.com>
>Date: Wed, 08 Dec 1999 09:33:12 -0800
>X-Message-Number: 1
>
>Hmmmm... I might be interested in a group buy should one take place.
>
>At 10:53 PM 12/07/1999 -0600, you wrote:
>>Some interesting surplus appearing in eBay this month
>>---------------------
>>Item #215831818 currently on auction:

>>
>>CPS/Continuous Positioning System:
>>
>>Combines the uninterrupted positioning capability of a dead reckoning system
>>with the absolute positioning capability of a Global Postioning System
>>(GPS). The dead reckoning navigation component uses a Fiber Optic Gyroscopic
>>Compass (FOG) and combines it with a vehicle odometer sensor, while the GPS
>>component utilizes a high-quality Motorola 8 channel DGPS capable GPS
>>receiver. Kalman-filter signal processing adapted from avionics and
>>aerospace applications optimally blends all the sensor information, and
>>outputs the resultant position fix in NMEA-0183 standard format through a
>>serial port.
>>
>>Uses 24V DC, weight 2 lbs, measures 8"x 6"x 3" RS232 Serial port NMEA-1083
>>output, RS232 Serial port RTCM input, SAE1807 compliant.
>>
>>Antenna not included, manual/additional specifications available upon
>>request, Rugged enough to withstand military applications.
>>
>>Up to 200 units, sold in lots of 50, sold as is.
>>-------
>>what I find interesting is 200 units !! ..... want to make a bet a Oncore
>>VP is hiding inside?
>>
>>G. Beat
>>w9gb
>>
>>
>>
>>---
>>You are currently subscribed to tacgps as: ROWL@EARTHCORP.COM
>>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>>
>>
>
>--------------------
>
>Michael St. Laurent
>Hartwell Corporation
>
>--
>
>Subject: Ebay 8 Channel GPS with Fiber Optic Gyro
>From: "Chuck Beuning" <cbeuning@kscable.com>
>Date: Wed, 8 Dec 1999 21:54:33 -0600
>X-Message-Number: 2
>
>Ref Ebay item #215831818 currently on auction:
>
>Cool! This is something I've been looking for for a long time. If someone
>buys the lot of 50, I will take 3 off their hands.
>KVH also has a differential GPS version of this, but then you would have to
>pay the full price.
>
>If you go to http://www.kvh.com/products/sensor/fog/cps.html you can obtain
>some more details for these units.
>
>Here is a paper on it's operation
>http://www.kvh.com/support/product_docs/blended.pdf
>
>It may contain this Gyro
>http://www.kvh.com/products/sensor/fog/autogyro.html.
>
>An ECore 1000 Gyro kit is selling for $1495....
>
>Chuck Beuning
>
>
>--
>
>Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>From: "Gregory Beat" <gregory.beat@mediaone.net>

>Date: Wed, 8 Dec 1999 22:13:48 -0600
>X-Message-Number: 3
>
>Caroline Reilly, who has these items for sale on eBay has a minimum bid of
>qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>I did not follow-up this inquiry and would expect a discount for a lot of 50

>sale.
>
>If there was interest Ms. Reilly's e-mail address is CReilly141@aol.com
>
>I have no connection with seller ... etc. etc. ... only an informational
>posting.
>
>G. Beat
>w9gb
>
>----- Original Message -----
>From: Chuck Beuning <cbeuning@kscable.com>
>To: TAPR Special Interest Group <tacgps@lists.tapr.org>
>Sent: Wednesday, December 08, 1999 9:54 PM
>Subject: [tacgps] Ebay 8 Channel GPS with Fiber Optic Gyro
>
>
>> Ref Ebay item #215831818 currently on auction:
>>
>> Cool! This is something I've been looking for for a long time. If someone
>> buys the lot of 50, I will take 3 off their hands.
>> KVH also has a differential GPS version of this, but then you would have
>to
>> pay the full price.
>>
>> If you go to http://www.kvh.com/products/sensor/fog/cps.html you can
>obtain
>> some more details for these units.
>>
>> Here is a paper on it's operation
>> http://www.kvh.com/support/product_docs/blended.pdf
>>
>> It may contain this Gyro
>> http://www.kvh.com/products/sensor/fog/autogyro.html.
>>
>> An ECore 1000 Gyro kit is selling for $1495....
>>
>> Chuck Beuning
>>
>>
>> ---
>> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
>> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>>
>
>
>--
>
>Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>From: G Sanders <gsanders1@bigfoot.com>
>Date: Thu, 09 Dec 1999 00:19:10 -0500
>X-Message-Number: 4
>
>Gregory Beat wrote:
>>
>> Caroline Reilly, who has these items for sale on eBay has a minimum bid of
>> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>> I did not follow-up this inquiry and would expect a discount for a lot
>of 50
>> sale.
>
>I also sent an inquiry to her earlier asking if the auction was for
>quantity 1 or quantity 50. I haven't received a response yet.
>
>I hope she puts a clarification on her auction, because I imagine
>someone's going to get a big surprise when the package arrives
>in the mail!
>
>Gary Sanders   WB0BZR
>
>
>
>---
>
>END OF DIGEST
>
>---
>You are currently subscribed to tacgps as: kn6td@clubnet.net
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

10. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Thu, 09 Dec 1999 09:31:52 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54319-1999.12.09-11.51.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:19 AM 12/09/1999 -0500, you wrote:
>> Caroline Reilly, who has these items for sale on eBay has a minimum bid of
>> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>> I did not follow-up this inquiry and would expect a discount for a lot
of 50
>> sale.
>
>I also sent an inquiry to her earlier asking if the auction was for
>quantity 1 or quantity 50. I haven't received a response yet.

Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?

>I hope she puts a clarification on her auction, because I imagine
>someone's going to get a big surprise when the package arrives
>in the mail!

Indeed! :-)

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

11. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: Gregory Beat <gregory.beat@mediaone.net>
Date: Thu, 09 Dec 1999 13:37:31 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54335-1999.12.09-13.51.09--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Michael -

I asked her that specific quesiton ... quantity 1 ..... is quantity 1 ... which
is not that much of a discount from buying new .. but with 200 ... I'm sure
discussions for a deep discount per unit could be discussed.

GB

"Michael St. Laurent" wrote:

> At 12:19 AM 12/09/1999 -0500, you wrote:
> >> Caroline Reilly, who has these items for sale on eBay has a minimum bid of
> >> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
> >> I did not follow-up this inquiry and would expect a discount for a lot
> of 50
> >> sale.
> >
> >I also sent an inquiry to her earlier asking if the auction was for
> >quantity 1 or quantity 50. I haven't received a response yet.
>
> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>
> >I hope she puts a clarification on her auction, because I imagine
> >someone's going to get a big surprise when the package arrives
> >in the mail!
>
> Indeed! :-)
>
> ---
>

> Michael St. Laurent
> Hartwell Corporation
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

12. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Thu, 09 Dec 1999 11:55:11 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54339-1999.12.09-14.54.42--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hmmmm... sound like it will be out of my price range. I was hoping to pick
up an Oncore VP on the cheap.

At 01:37 PM 12/09/1999 -0600, you wrote:
>Michael -
>
>I asked her that specific quesiton ... quantity 1 ..... is quantity 1 ...
which
>is not that much of a discount from buying new .. but with 200 ... I'm sure
>discussions for a deep discount per unit could be discussed.
>
>GB
>
>"Michael St. Laurent" wrote:
>
>> At 12:19 AM 12/09/1999 -0500, you wrote:
>> >> Caroline Reilly, who has these items for sale on eBay has a minimum
bid of
>> >> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>> >> I did not follow-up this inquiry and would expect a discount for a lot
>> of 50
>> >> sale.
>> >
>> >I also sent an inquiry to her earlier asking if the auction was for
>> >quantity 1 or quantity 50. I haven't received a response yet.
>>
>> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>>
>> >I hope she puts a clarification on her auction, because I imagine
>> >someone's going to get a big surprise when the package arrives
>> >in the mail!
>>
>> Indeed! :-)
>>
>> --------------------
>>
>> Michael St. Laurent
>> Hartwell Corporation
>>
>> ---
>> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
>> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>
>---
>You are currently subscribed to tacgps as: ROWL@EARTHCORP.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

13. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: Edwin Horton <edhorton@navcorp.com>
Date: Thu, 9 Dec 1999 16:23:08 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54347-1999.12.09-16.38.18--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Could you let me knoe the item numger or catagory of this fiber optic
gyro?

Regards,
Ed Horton

-----Original Message-----
From: Michael St. Laurent [mailto:rowl@earthcorp.com]
Sent: Thursday, December 09, 1999 11:32 AM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

At 12:19 AM 12/09/1999 -0500, you wrote:
>> Caroline Reilly, who has these items for sale on eBay has a minimum
bid of
>> qty 1 around $ 1,000. She would like to sell the units in lots of
50.
>> I did not follow-up this inquiry and would expect a discount for a
lot
of 50
>> sale.
>
>I also sent an inquiry to her earlier asking if the auction was for
>quantity 1 or quantity 50. I haven't received a response yet.

Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?

>I hope she puts a clarification on her auction, because I imagine
>someone's going to get a big surprise when the package arrives
>in the mail!

Indeed! :-)

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: edhorton@navcorp.com
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

14. [tacgps] Repost

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Thu, 9 Dec 1999 19:46:24 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54371-1999.12.09-20.01.23--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As posted on December 7th:

Item #215831818 currently on auction:

CPS/Continuous Positioning System:

Combines the uninterrupted positioning capability of a dead reckoning system
with the absolute positioning capability of a Global Postioning System
(GPS). The dead reckoning navigation component uses a Fiber Optic Gyroscopic
Compass (FOG) and combines it with a vehicle odometer sensor, while the GPS
component utilizes a high-quality Motorola 8 channel DGPS capable GPS
receiver. Kalman-filter signal processing adapted from avionics and
aerospace applications optimally blends all the sensor information, and
outputs the resultant position fix in NMEA-0183 standard format through a
serial port.

Uses 24V DC, weight 2 lbs, measures 8"x 6"x 3" RS232 Serial port NMEA-1083
output, RS232 Serial port RTCM input, SAE1807 compliant.

Antenna not included, manual/additional specifications available upon
request, Rugged enough to withstand military applications.

Up to 200 units, sold in lots of 50, sold as is.

----- Original Message -----
From: Edwin Horton <edhorton@navcorp.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, December 09, 1999 4:23 PM
Subject: [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

> Could you let me knoe the item numger or catagory of this fiber optic
> gyro?
>
> Regards,
> Ed Horton
>
> -----Original Message-----
> From: Michael St. Laurent [mailto:rowl@earthcorp.com]
> Sent: Thursday, December 09, 1999 11:32 AM
> To: TAPR Special Interest Group
> Subject: [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>
>
> At 12:19 AM 12/09/1999 -0500, you wrote:
> >> Caroline Reilly, who has these items for sale on eBay has a minimum
> bid of
> >> qty 1 around $ 1,000. She would like to sell the units in lots of
> 50.
> >> I did not follow-up this inquiry and would expect a discount for a
> lot
> of 50
> >> sale.
> >
> >I also sent an inquiry to her earlier asking if the auction was for
> >quantity 1 or quantity 50. I haven't received a response yet.
>
> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>
> >I hope she puts a clarification on her auction, because I imagine
> >someone's going to get a big surprise when the package arrives
> >in the mail!
>
> Indeed! :-)
>
>
> --------------------
>
> Michael St. Laurent
> Hartwell Corporation
>
> ---
> You are currently subscribed to tacgps as: edhorton@navcorp.com
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

15. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: G Sanders <gsanders1@bigfoot.com>
Date: Thu, 09 Dec 1999 22:57:21 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54382-1999.12.09-22.12.14--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Michael St. Laurent" wrote:
>
>

> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>

It means ONE EACH. I got an answer back from her today. While it
may be a decent price at $1.1K (or more), it's definitely out of
my price range for a toy - especially if she wants me to buy
50 at that price each!
--

Gary Sanders

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

16. [tacgps] RE: tacgps digest: December 09, 1999

From: luciano_paramithiotti@hp.com
Date: Fri, 10 Dec 1999 08:58:42 +0100
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54413-1999.12.10-02.14.52--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am also interested to buy few (5 to ten)
Add me to the list
thankyou
Luciano Paramithiotti

luciano_paramithiotti@hp.com

-----Original Message-----
From: tacgps@lists.tapr.org [mailto:tacgps@lists.tapr.org]
Sent: venerdì 10 dicembre 1999 7.01
To: tacgps@lists.tapr.org
Cc: tacgps@lists.tapr.org
Subject: FW: tacgps digest: December 09, 1999

TAPR Special Interest Group Digest for Thursday, December 09, 1999.

1. Re: tacgps digest: December 08, 1999
2. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
3. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
4. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
5. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
6. Repost
7. Re: Ebay 8 Channel GPS with Fiber Optic Gyro

Subject: Re: tacgps digest: December 08, 1999
From: Derek Lassen <kn6td@clubnet.net>
Date: Wed, 08 Dec 1999 23:57:25 -0800
X-Message-Number: 1

I would like to buy a few, also (if cheap).
At 12:01 AM 12/9/99 -0600, you wrote:
>TAPR Special Interest Group Digest for Wednesday, December 08, 1999.
>
>1. Re: another interesting GPS item
>2. Ebay 8 Channel GPS with Fiber Optic Gyro
>3. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>4. Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>
>---
>
>Subject: Re: another interesting GPS item
>From: "Michael St. Laurent" <rowl@earthcorp.com>
>Date: Wed, 08 Dec 1999 09:33:12 -0800
>X-Message-Number: 1
>
>Hmmmm... I might be interested in a group buy should one take place.
>
>At 10:53 PM 12/07/1999 -0600, you wrote:
>>Some interesting surplus appearing in eBay this month
>>----------
>>Item #215831818 currently on auction:
>>
>>CPS/Continuous Positioning System:
>>

>>Combines the uninterrupted positioning capability of a dead reckoning
system
>>with the absolute positioning capability of a Global Postioning System
>>(GPS). The dead reckoning navigation component uses a Fiber Optic
Gyroscopic
>>Compass (FOG) and combines it with a vehicle odometer sensor, while the
GPS
>>component utilizes a high-quality Motorola 8 channel DGPS capable GPS
>>receiver. Kalman-filter signal processing adapted from avionics and
>>aerospace applications optimally blends all the sensor information, and
>>outputs the resultant position fix in NMEA-0183 standard format through a
>>serial port.
>>
>>Uses 24V DC, weight 2 lbs, measures 8"x 6"x 3" RS232 Serial port
NMEA-1083
>>output, RS232 Serial port RTCM input, SAE1807 compliant.
>>
>>Antenna not included, manual/additional specifications available upon
>>request, Rugged enough to withstand military applications.
>>
>>Up to 200 units, sold in lots of 50, sold as is.
>>-------
>>what I find interesting is 200 units !! ..... want to make a bet a
Oncore
>>VP is hiding inside?
>>
>>G. Beat
>>w9gb
>>
>>
>>
>>---
>>You are currently subscribed to tacgps as: ROWL@EARTHCORP.COM
>>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>>
>>
>
>--------------------
>
>Michael St. Laurent
>Hartwell Corporation
>
>--
>
>Subject: Ebay 8 Channel GPS with Fiber Optic Gyro
>From: "Chuck Beuning" <cbeuning@kscable.com>
>Date: Wed, 8 Dec 1999 21:54:33 -0600
>X-Message-Number: 2
>
>Ref Ebay item #215831818 currently on auction:
>
>Cool! This is something I've been looking for for a long time. If someone
>buys the lot of 50, I will take 3 off their hands.
>KVH also has a differential GPS version of this, but then you would have
to
>pay the full price.
>
>If you go to http://www.kvh.com/products/sensor/fog/cps.html you can
obtain
>some more details for these units.
>
>Here is a paper on it's operation
>http://www.kvh.com/support/product_docs/blended.pdf
>
>It may contain this Gyro
>http://www.kvh.com/products/sensor/fog/autogyro.html.
>
>An ECore 1000 Gyro kit is selling for $1495....
>
>Chuck Beuning
>
>
>--
>
>Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>From: "Gregory Beat" <gregory.beat@mediaone.net>

>Date: Wed, 8 Dec 1999 22:13:48 -0600
>X-Message-Number: 3

>
>Caroline Reilly, who has these items for sale on eBay has a minimum bid of
>qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>I did not follow-up this inquiry and would expect a discount for a lot of
50
>sale.
>
>If there was interest Ms. Reilly's e-mail address is CReilly141@aol.com
>
>I have no connection with seller ... etc. etc. ... only an informational
>posting.
>
>G. Beat
>w9gb
>
>----- Original Message -----
>From: Chuck Beuning <cbeuning@kscable.com>
>To: TAPR Special Interest Group <tacgps@lists.tapr.org>
>Sent: Wednesday, December 08, 1999 9:54 PM
>Subject: [tacgps] Ebay 8 Channel GPS with Fiber Optic Gyro
>
>
>> Ref Ebay item #215831818 currently on auction:
>>
>> Cool! This is something I've been looking for for a long time. If
someone
>> buys the lot of 50, I will take 3 off their hands.
>> KVH also has a differential GPS version of this, but then you would have
>to
>> pay the full price.
>>
>> If you go to http://www.kvh.com/products/sensor/fog/cps.html you can
>obtain
>> some more details for these units.
>>
>> Here is a paper on it's operation
>> http://www.kvh.com/support/product_docs/blended.pdf
>>
>> It may contain this Gyro
>> http://www.kvh.com/products/sensor/fog/autogyro.html.
>>
>> An ECore 1000 Gyro kit is selling for $1495....
>>
>> Chuck Beuning
>>
>>
>> ---
>> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
>> To unsubscribe send a blank email to leave-tacgps-5596V@lists.tapr.org
>>
>
>
>--
>
>Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>From: G Sanders <gsanders1@bigfoot.com>
>Date: Thu, 09 Dec 1999 00:19:10 -0500
>X-Message-Number: 4
>
>Gregory Beat wrote:
>>
>> Caroline Reilly, who has these items for sale on eBay has a minimum bid
of
>> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>> I did not follow-up this inquiry and would expect a discount for a lot
of 50
>> sale.
>
>I also sent an inquiry to her earlier asking if the auction was for
>quantity 1 or quantity 50. I haven't received a response yet.
>
>I hope she puts a clarification on her auction, because I imagine
>someone's going to get a big surprise when the package arrives
>in the mail!
>
>Gary Sanders   WB0BZR
>
>
>

>---
>
>END OF DIGEST
>
>---
>You are currently subscribed to tacgps as: kn6td@clubnet.net
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Thu, 09 Dec 1999 09:31:52 -0800
X-Message-Number: 2

At 12:19 AM 12/09/1999 -0500, you wrote:
>> Caroline Reilly, who has these items for sale on eBay has a minimum bid
of
>> qty 1 around $ 1,000. She would like to sell the units in lots of 50.
>> I did not follow-up this inquiry and would expect a discount for a lot
of 50
>> sale.
>
>I also sent an inquiry to her earlier asking if the auction was for
>quantity 1 or quantity 50. I haven't received a response yet.

Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?

>I hope she puts a clarification on her auction, because I imagine
>someone's going to get a big surprise when the package arrives
>in the mail!

Indeed! :-)

Michael St. Laurent
Hartwell Corporation

Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
From: Gregory Beat <gregory.beat@mediaone.net>
Date: Thu, 09 Dec 1999 13:37:31 -0600
X-Message-Number: 3

Michael -

I asked her that specific quesiton ... quantity 1 ..... is quantity 1 ...
which
is not that much of a discount from buying new .. but with 200 ... I'm sure
discussions for a deep discount per unit could be discussed.

GB

"Michael St. Laurent" wrote:

> At 12:19 AM 12/09/1999 -0500, you wrote:
> >> Caroline Reilly, who has these items for sale on eBay has a minimum
bid of
> >> qty 1 around $ 1,000. She would like to sell the units in lots of
50.
> >> I did not follow-up this inquiry and would expect a discount for a lot
> of 50
> >> sale.
> >
> >I also sent an inquiry to her earlier asking if the auction was for
> >quantity 1 or quantity 50. I haven't received a response yet.
>
> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>
> >I hope she puts a clarification on her auction, because I imagine
> >someone's going to get a big surprise when the package arrives
> >in the mail!
>
> Indeed! :-)

>
> --------------------
>
> Michael St. Laurent
> Hartwell Corporation
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---

Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Thu, 09 Dec 1999 11:55:11 -0800
X-Message-Number: 4

Hmmmm... sound like it will be out of my price range. I was hoping to pick
up an Oncore VP on the cheap.

At 01:37 PM 12/09/1999 -0600, you wrote:
>Michael -
>
>I asked her that specific quesiton ... quantity 1 ..... is quantity 1 ...
which
>is not that much of a discount from buying new .. but with 200 ... I'm
sure
>discussions for a deep discount per unit could be discussed.
>
>GB
>
>"Michael St. Laurent" wrote:
>
>> At 12:19 AM 12/09/1999 -0500, you wrote:
>> >> Caroline Reilly, who has these items for sale on eBay has a minimum
bid of
>> >> qty 1 around $ 1,000. She would like to sell the units in lots of
50.
>> >> I did not follow-up this inquiry and would expect a discount for a
lot
>> of 50
>> >> sale.
>> >
>> >I also sent an inquiry to her earlier asking if the auction was for
>> >quantity 1 or quantity 50. I haven't received a response yet.
>>
>> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>>
>> >I hope she puts a clarification on her auction, because I imagine
>> >someone's going to get a big surprise when the package arrives
>> >in the mail!
>>
>> Indeed! :-)
>>
>> --------------------
>>
>> Michael St. Laurent
>> Hartwell Corporation
>>
>> ---
>> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
>> To unsubscribe send a blank email to leave-tacgps-5596V@lists.tapr.org
>
>
>---
>You are currently subscribed to tacgps as: ROWL@EARTHCORP.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

Michael St. Laurent
Hartwell Corporation

Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: Edwin Horton <edhorton@navcorp.com>
Date: Thu, 9 Dec 1999 16:23:08 -0600
X-Message-Number: 5

Could you let me knoe the item numger or catagory of this fiber optic
gyro?

Regards,
Ed Horton

-----Original Message-----
From: Michael St. Laurent [mailto:rowl@earthcorp.com]
Sent: Thursday, December 09, 1999 11:32 AM
To: TAPR Special Interest Group
Subject: [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

At 12:19 AM 12/09/1999 -0500, you wrote:
>> Caroline Reilly, who has these items for sale on eBay has a minimum
bid of
>> qty 1 around $ 1,000. She would like to sell the units in lots of
50.
>> I did not follow-up this inquiry and would expect a discount for a
lot
of 50
>> sale.
>
>I also sent an inquiry to her earlier asking if the auction was for
>quantity 1 or quantity 50. I haven't received a response yet.

Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?

>I hope she puts a clarification on her auction, because I imagine
>someone's going to get a big surprise when the package arrives
>in the mail!

Indeed! :-)

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: edhorton@navcorp.com
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

----

Subject: Repost
From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Thu, 9 Dec 1999 19:46:24 -0600
X-Message-Number: 6

As posted on December 7th:

Item #215831818 currently on auction:

CPS/Continuous Positioning System:

Combines the uninterrupted positioning capability of a dead reckoning
system
with the absolute positioning capability of a Global Postioning System
(GPS). The dead reckoning navigation component uses a Fiber Optic
Gyroscopic
Compass (FOG) and combines it with a vehicle odometer sensor, while the GPS
component utilizes a high-quality Motorola 8 channel DGPS capable GPS
receiver. Kalman-filter signal processing adapted from avionics and
aerospace applications optimally blends all the sensor information, and
outputs the resultant position fix in NMEA-0183 standard format through a
serial port.

Uses 24V DC, weight 2 lbs, measures 8"x 6"x 3" RS232 Serial port NMEA-1083
output, RS232 Serial port RTCM input, SAE1807 compliant.

Antenna not included, manual/additional specifications available upon
request, Rugged enough to withstand military applications.

Up to 200 units, sold in lots of 50, sold as is.

----- Original Message -----
From: Edwin Horton <edhorton@navcorp.com>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Thursday, December 09, 1999 4:23 PM
Subject: [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

> Could you let me knoe the item numger or catagory of this fiber optic
> gyro?
>
> Regards,
> Ed Horton
>
> -----Original Message-----
> From: Michael St. Laurent [mailto:rowl@earthcorp.com]
> Sent: Thursday, December 09, 1999 11:32 AM
> To: TAPR Special Interest Group
> Subject: [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro
>
>
> At 12:19 AM 12/09/1999 -0500, you wrote:
> >> Caroline Reilly, who has these items for sale on eBay has a minimum
> bid of
> >> qty 1 around $ 1,000. She would like to sell the units in lots of
> 50.
> >> I did not follow-up this inquiry and would expect a discount for a
> lot
> of 50
> >> sale.
> >
> >I also sent an inquiry to her earlier asking if the auction was for
> >quantity 1 or quantity 50. I haven't received a response yet.
>
> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>
> >I hope she puts a clarification on her auction, because I imagine
> >someone's going to get a big surprise when the package arrives
> >in the mail!
>
> Indeed! :-)
>
>
> --------------------
>
> Michael St. Laurent
> Hartwell Corporation
>
> ---
> You are currently subscribed to tacgps as: edhorton@navcorp.com
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
> ---
> You are currently subscribed to tacgps as: GREGORY.BEAT@MEDIAONE.NET
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

Subject: Re: Ebay 8 Channel GPS with Fiber Optic Gyro
From: G Sanders <gsanders1@bigfoot.com>
Date: Thu, 09 Dec 1999 22:57:21 -0500
X-Message-Number: 7

"Michael St. Laurent" wrote:
>
>
> Yes, does quantity of 1 mean 1 lot of 50 pieces or 1 piece?
>

It means ONE EACH. I got an answer back from her today. While it
may be a decent price at $1.1K (or more), it's definitely out of
my price range for a toy - especially if she wants me to buy
50 at that price each!
--

Gary Sanders

END OF DIGEST

You are currently subscribed to tacgps as: LUCIANO_PARAMITHIOTTI@HP.COM
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

---
You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

17. [tacgps] Re: Ebay 8 Channel GPS with Fiber Optic Gyro

From: Jeff King <jeff@aerodata.net>
Date: Fri, 10 Dec 1999 23:31:26 -0500
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-54537-1999.12.10-22.46.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:57 PM 12/9/99 -0500, G Sanders wrote:
>It means ONE EACH. I got an answer back from her today. While it
>may be a decent price at $1.1K (or more), it's definitely out of
>my price range for a toy - especially if she wants me to buy
>50 at that price each!

Not sure if anyone noticed the location of the picture (on
E-bay, they don't host the pictures, you put a link to your
site), but its from www.cleverdevices.com.

Clever Devices did and does sell GPS based transit (bus)
stop announcement equipment. As such, something like this
should be quite useful to them

Since they are dumping them, they either don't work well,
are yesterdays model or someone cancelled a order with them
and they are stuck with them.

-Jeff

>--
>
>Gary Sanders
>
>---
>You are currently subscribed to tacgps as: JEFF@MICH.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

18. [tacgps] Garmin GPS-25 firmware upgrade

From: Tom Cox <tom@cox.org>
Date: Sat, 18 Dec 1999 19:24:08 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-55859-1999.12.18-19.39.28--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

A Garmin web page (http://www.garmin.com/support/download.html)
offers a GPS-25 firmware update.

It seems to me that I ought to be able to modify the TAC-2 slightly
(I hope) to assist in the firmware upgrade process. At a minimum, I'd
need to provide two more lines from the receiver to the board, since
the upgrade process uses the Garmin's second serial port.

Has anyone worked out the details of this TAC-2 modification?

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

19. [tacgps] Re: Garmin GPS-25 firmware upgrade

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Mon, 20 Dec 1999 11:07:51 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-56081-1999.12.20-13.27.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Any idea what the upgrade does (corrects, adds, removes, etc.)?

At 07:24 PM 12/18/1999 -0600, you wrote:
>A Garmin web page (http://www.garmin.com/support/download.html)
>offers a GPS-25 firmware update.
>
>It seems to me that I ought to be able to modify the TAC-2 slightly
>(I hope) to assist in the firmware upgrade process. At a minimum, I'd
>need to provide two more lines from the receiver to the board, since
>the upgrade process uses the Garmin's second serial port.
>
>Has anyone worked out the details of this TAC-2 modification?
>
>---
>You are currently subscribed to tacgps as: ROWL@EARTHCORP.COM
>To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>
>

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

20. [tacgps] Re: Garmin GPS-25 firmware upgrade

From: Tom Cox <tom@cox.org>
Date: Mon, 20 Dec 1999 14:10:49 -0600
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-56082-1999.12.20-14.26.00--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Machael St. Laurent wrote, concerning the Garmin GPS-25 firmware upgrade:

>Any idea what the upgrade does (corrects, adds, removes, etc.)?

Quoting the Garmin web site...

This software is the latest production software as of 11/4/1999 and
adds/corrects the following:

        Improve PPS operation during extreme CPU loading/shading events.
        Improved PPS accuracy (added in version 2.22).
        Improved urban canyon performance (added in version 2.22).
        Added position pinning option (added in version 2.22).

This software (version 2.23) is only compatible with GPS 25LP and GPS
35LP units with operating software versions 2.00 to 2.21.

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

21. [tacgps] Re: Garmin GPS-25 firmware upgrade

From: Dave Martindale <davem@cs.ubc.ca>
Date: Mon, 20 Dec 1999 12:17:16 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-56084-1999.12.20-14.32.58--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 11:07 AM 20/12/99 -0800, Michael St. Laurent wrote:
>Any idea what the upgrade does (corrects, adds, removes, etc.)?

>From the Garmin web page (http://www.garmin.com/support/gps25LP35LP2.23.html):

>GPS 25LP series/GPS 35LP series software version 2.23
>This software is the latest production software as of 11/4/1999 and
>adds/corrects the following:
>
>Improve PPS operation during extreme CPU loading/shading events.
>Improved PPS accuracy (added in version 2.22).
>Improved urban canyon performance (added in version 2.22).
>Added position pinning option (added in version 2.22).
>
>Please Note: This software is only compatible with GPS 25LP (GPS 25 xVx) and
>GPS 35LP (GPS 35 xVx) units with operating software versions 2.00 to 2.21.

So there is one timing-related change if you were already running 2.22,
but two if your firmware is older than that.

As for the difficulty of doing the update: as someone noted, you need
to connect to the second serial port. I had done this a long time ago
anyway, since the second serial port provides raw data output (pseudoranges
and carrier phase). It was a pretty trivial modification to have the
existing one serial port connect to either of the two ports on the GPS 25.

I don't have a real TAC kit; I built something that is electrically very
similar before the TAPR kit was available. In my "TACalike" all that
was required was to add a DPDT switch, connecting the MAX232 level
converter to either of the two GPS25 serial ports. This allows access
to NMEA or binary data, but not both at once. I expect it would be
easy to do this with a genuine TAC as well.

Someday I plan on redesigning the thing to replace 3 small perfboards
of circuitry (built at different times) with a single PC board. When
I do that, I'll provide two separate DB-9 connectors on the box that
are connected to the GPS-25's two serial ports full-time, allowing
simultaneous NMEA and binary output.

        Dave

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

22. [tacgps] Re: Garmin GPS-25 firmware upgrade

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Mon, 20 Dec 1999 12:37:13 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-56090-1999.12.20-16.28.11--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 02:10 PM 12/20/1999 -0600, you wrote:
>>Any idea what the upgrade does (corrects, adds, removes, etc.)?
>
>Quoting the Garmin web site...
>
>This software is the latest production software as of 11/4/1999 and
>adds/corrects the following:
>
>   Improve PPS operation during extreme CPU loading/shading events.
!

>   Improved PPS accuracy (added in version 2.22).
!!!

>   Improved urban canyon performance (added in version 2.22).
>   Added position pinning option (added in version 2.22).
>
>This software (version 2.23) is only compatible with GPS 25LP and GPS
>35LP units with operating software versions 2.00 to 2.21.
>

Excellent!

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

23. [tacgps] Garmin GPS-25 firmware upgrade

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Tue, 21 Dec 1999 10:19:15 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-56219-1999.12.21-12.34.51--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, I applied the firmware upgrade using the cable from an old GPS-30PC. I had to move the pins on the 12-pin connector from 4&5 down to 1&2 then connected an AC adapter to the automotive power connecter. My previous version of the firmware was 2.10. I'll post if it looks like there's an improvement.

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

24. [tacgps] Re: Garmin GPS-25 firmware upgrade

From: "Michael St. Laurent" <rowl@earthcorp.com>
Date: Tue, 21 Dec 1999 15:07:55 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-56246-1999.12.21-17.24.27--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:19 AM 12/21/1999 -0800, you wrote:
>OK, I applied the firmware upgrade using the cable from an old GPS-30PC. I
>had to move the pins on the 12-pin connector from 4&5 down to 1&2 then
>connected an AC adapter to the automotive power connecter. My previous
>version of the firmware was 2.10. I'll post if it looks like there's an
>improvement.

So far I've not noticed any difference in operation. I am still getting 1-3 us of jitter with occasional spikes as high as 10us. This is using ntp-4.0.98f on a Linux system (kernel 2.2.12) and the PPS kit.

Michael St. Laurent
Hartwell Corporation

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

25. [tacgps] DGPS Problems

From: "Brian Kirby" <brian.kirby@msfc.nasa.gov>
Date: Wed, 29 Dec 1999 21:50:51
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-57201-1999.12.29-22.06.45--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greetings from Huntsville, Alabama. I am a new "poster" to the forum.

I have just aquired a Motorola Oncore VP and TAPR DGPS board. I am having a minor problem, that I can not get the Oncore to accept a DGPS input from a Garmin GBR-21 receiver.

The Oncore appears to be working OK. TAC32 is indicating 1PPS and position. The GBR-21 is working. I have a spliiter cable wired to the Oncore, the GBR-21 and a Garmin 12XL. The 12XL is controlling the receiver and it shows differntial lockup. The GBR-21 is configured to send RTCM at 4800 Bps. TAC32 is set up for Motorola Binary.

I have the Oncore wired to a DB9 connector, pin 1 is the 1 PPS, pin 2 is the Oncore TX, pin 3 is the Oncore RX, pin 5 is ground.

The GBR-21 is sending RTCM via pin 3. What I have done is put a switch in line on pin 3 that selects either the computer or the RTCM input. I sent the CORIN command (@@Ce) from TAC32 and then I switch to the GBR-21. TAC32 does not show it is receiving DGPS (when I run the 12XL and GBR-21 only with TAC32, is display the differential status, station, age, etc).

I am inputing RTCM on the computer I/O. I have a seperate cable coming out

of the Oncore for its TAPR DGPS output.

The Oncore's DGPS output also works. I can feed it to the 12XL and it
shows differential lockup.

I am using TAC32 V2.4.0.1. The Oncore SW is 98-P36830P, SW Ver 10, Rev 0,
Date 24 Sep 1997, Model B8221Z1116, S/N EOOLMJ, Mfg date 9E25, Options are
IBC.

Anybody have any suggestions ?

What I am attempting to do, is to re-survey using the differntial input to
the Oncore.

I bought the Oncore for two reasons. First, I want to be able to generate
DGPS locally. I am 133 miles for Hartsville, TN which is the nearest Coast
Guard DGPS transmitter site. I can only receive the signal during daylight
hours. Second, I have plans to use the Oncore as the TAC to check up on my
rubidium oscillator.

Thanks - Brian Kirby
kirbybq@hiwaay.net or brian.kirby@msfc.nasa.gov

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org

26. [tacgps] Re: DGPS Problems

From: "Doug McKinney" <Design@mt.to>
Date: Thu, 30 Dec 1999 02:32:08 -0800
To: "TAPR Special Interest Group" <tacgps@lists.tapr.org>
Message-ID: <LYR6754-57245-1999.12.30-04.53.41--lyris.tacgps#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Brian Kirby <brian.kirby@msfc.nasa.gov>
To: TAPR Special Interest Group <tacgps@lists.tapr.org>
Sent: Wednesday, December 29, 1999 9:50 PM
Subject: [tacgps] DGPS Problems

> Greetings from Huntsville, Alabama. I am a new "poster" to the forum.
>
> I have just aquired a Motorola Oncore VP and TAPR DGPS board. I am having
> a minor problem, that I can not get the Oncore to accept a DGPS input from
> a Garmin GBR-21 receiver.
>
> The Oncore appears to be working OK. TAC32 is indicating 1PPS and
> position. The GBR-21 is working. I have a spliiter cable wired to the
> Oncore, the GBR-21 and a Garmin 12XL. The 12XL is controlling the
receiver
> and it shows differntial lockup. The GBR-21 is configured to send RTCM at
> 4800 Bps. TAC32 is set up for Motorola Binary.

Set to 9600 baud when in Motorola binary!

>
> I have the Oncore wired to a DB9 connector, pin 1 is the 1 PPS, pin 2 is
> the Oncore TX, pin 3 is the Oncore RX, pin 5 is ground.
>
> The GBR-21 is sending RTCM via pin 3. What I have done is put a switch in
> line on pin 3 that selects either the computer or the RTCM input. I sent
> the CORIN command (@@Ce) from TAC32 and then I switch to the GBR-21.
TAC32
> does not show it is receiving DGPS (when I run the 12XL and GBR-21 only
> with TAC32, is display the differential status, station, age, etc).
>
> I am inputing RTCM on the computer I/O. I have a seperate cable coming
out
> of the Oncore for its TAPR DGPS output.
>
> The Oncore's DGPS output also works. I can feed it to the 12XL and it
> shows differential lockup.
>
> I am using TAC32 V2.4.0.1. The Oncore SW is 98-P36830P, SW Ver 10, Rev 0,
> Date 24 Sep 1997, Model B8221Z1116, S/N EOOLMJ, Mfg date 9E25, Options are
> IBC.
>
> Anybody have any suggestions ?

You have not always stated the baud rate of the data. When in Motorola
binary mode, all data is 9600, both binary DGPS and RTCM inputs. Every
thing else you are doing appears to be correct. So, set the GBR-21 for 9600
Bps and not 4800 Bps.

Doug McKinney, KC3RL

>
> What I am attempting to do, is to re-survey using the differntial input to
> the Oncore.
>
> I bought the Oncore for two reasons. First, I want to be able to generate
> DGPS locally. I am 133 miles for Hartsville, TN which is the nearest
Coast
> Guard DGPS transmitter site. I can only receive the signal during
daylight
> hours. Second, I have plans to use the Oncore as the TAC to check up on
my
> rubidium oscillator.
>
> Thanks - Brian Kirby
> kirbybq@hiwaay.net or brian.kirby@msfc.nasa.gov
>
> ---
> You are currently subscribed to tacgps as: KC3RL@MCKTECH.COM
> To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org
>

You are currently subscribed to tacgps as: lyris.tacgps@tapr.org
To unsubscribe send a blank email to leave-tacgps-6754G@lists.tapr.org